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ABSTRACT

This report presents supplementary findings of a study on disparities in reading test scores between white and minority students in Cleveland, Ohio, public schools. Phase four results indicate that: (1) proportions of declining reading scores were greatest in those grades where reassignment due to the desegregation plan and building structures was greatest; (2) lowest pretest scorers performed better on the posttest than students in general, suggesting the effectiveness of compensatory education programs for low achievers; (3) among the lowest pretest scorers, whites did better on the posttest than minorities; (4) the top third of students performed poorly on the pretest compared to the national norm but did better than expected when compared with the Cleveland Public Schools norm; (5) the middle group of students performed poorly on the pretest than predicted from overall student performance; (6) a special regression analysis yielded a statistically significant gain for whites but not for minorities, among students who had attended THINK, a remedial reading program; (7) THINK students who scored lowest on the pretest did better on the posttest than a comparable group of non-THINK students, but the reverse occurred for the highest scorers, suggesting that low performing white students benefitted most from THINK; (8) higher-achieving students out-migrated at a greater rate than lower achievers; and (9) family income was a more significant predictor of student out-migration than race. (MJL)

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A STUDY OF DISCREPANT READING ACHIEVEMENT OF MINORITY AND WHITE STUDENTS IN A DESEGREGATING SCHOOL DISTRICT:

- PHASE IV -

James Zafirau
Margaret Fleming

- Cleveland Public Schools -

June 1982

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PHASE IV

INTRODUCTION

The United States District Court, Northern District of Ohio, Eastern Division, by its Remedial Order of February 6, 1978 mandated that the school district conduct a study to determine the nature and extent of disparities in the reading test scores of minority and white pupils in the Cleveland Public Schools at the elementary, junior high and senior high school levels.

This section, Phase IV, presents additional findings of this court ordered study to determine the nature and extent of reading disparities:

OBJECTIVES:

Phase IV supplements the interim findings presented in the report for Phase I, II and III, March 1982, which addressed these objectives including data for 1980-81 school year:

- To determine if there are significant differences between minority and white students in reading comprehension and, if so, whether these differences (where they exist) are pervasive throughout the school system;
- To identify high and low schools in terms of minority-white reading comprehension discrepancy;
- To identify and contrast students who showed the most gains in reading performance with those students who showed the least gains in terms of various indicators.

Utilizing data for secondary schools only, the study focused on two additional objectives:

- To contrast high and low schools in terms of various school climate factors;

- To develop a useful predictive model for school-wide reading comprehension using the school climate and student indicators.

Phase IV objectives arise out of the additional insights identified in the analysis of the data. These objectives include:

- To compare student groups by race and grade level which show high, middle and low reading comprehension gains;
- To compare progress of total, high and low reading comprehension pre-test students enrolled in the THINK program with those not enrolled in THINK during its first year of implementation;
- To compare reading comprehension performance of students migrating from the school district with students remaining in the school district; and
- To compare reading comprehension performance of minority and white students in three family income levels.

FINDINGS

Phase IV

The findings offer implications for the continuing efforts in implementing the court ordered educational components to overcome the gap in reading performance between minority and white students.

Comparison of High, Middle and Low Gaining Student Groups

Do students evidencing various degrees of reading score gains differ in terms of race and grade? Four and seven NCE units were used in categorizing students into high, middle and low gaining groups because these units are the score ranges frequently used in many on-going compensatory program evaluations, most notably Title I evaluations. Using the pre-and-post NCE scores in the grades available, which included 4, 5 and 6 and 9, 10 and 11, the results of the analyses show:

- No significant differences between minority and white students in the proportion of students gaining or regressing four or more reading comprehension NCE units.

- No significant differences in the proportion regressing or gaining less than four NCE units.
- No significant differences when seven rather than four NCE units were utilized in the analyses.

When grades were compared, there were significant differences with respect to the proportion of students' gaining, regressing or not changing at least by four or seven NCE units between pre-and-post tests. Results indicate:

- Two grades, grades 4 and 7, of the seven grades (kindergarten through 12) with available data, reflect the greatest proportion of declining scores.

These grades represent reassignment and articulation points because of the desegregation assignment plan and building level structures 4 through 6 and 7 through 9 for a majority of students in the school district. See Appendix G for statistical detail.

The relationship of test scores over the full range of pre and post-test values in terms of local norms as well as national norms was examined. Use of local norms typically presents greater methodological problems than does the use of national norms, but such problems are herein addressed through the use of a special regression model.

Relatedly, the use of normal curve equivalent (NCE) scores rather than raw scores, grade equivalents, percentile ranks and the like enables use of procedures which require interval measures. The city-wide testing program provides NCE units for all students; thus "local norms" can be obtained by estimating what a specific group of "treatment" students could have been expected to do on the post-test and by using the remaining students are the comparison (control) group. This comparison group is used for predicting what the treatment group's performance would have been had the group not received special treatment. The advantage of the regression model in school evaluation

designs is basically two-fold:

1. A control group in the classical experimental sense (and the school assignment problems it presents) is not required. It is not necessary, therefore to randomly select and assign students to both comparison (control) and treatment (experimental) groups. Thus, needed educational treatment does not have to be denied a group of students simply to provide a control group for comparison with a treatment. True random selection and assignment of students are almost impossible to do in a typical school system.

2. Equivalent treatment and comparison groups are not required with the regression model--not even in terms of a sole selection criterion measure. For example, students scoring above a specified pre-test score can be used as a control group for evaluating a compensatory program involving students selected on the basis of their being below the same pre-test score so long as a common post-test (performance criterion which can be different or the same as the pre-test measure) is given to both the treatment and comparison groups.

All that is required in utilizing the regression model in this case is that the relationship between pre and post-test be linear with a correlation coefficient between the pre and post-test of sufficient magnitude.

General Regression Findings

Although deviating somewhat from linearity, the relationship between (1980-1981) pre and post-test reading comprehension scores for all grades with such pre-post paired scores (grades 4-7 and grades 9-11) is significantly and essentially linear. Appendix H presents the statistical detail. This relationship is illustrated graphically in Figure 6.

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Insert Figure 6 here.

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Based on the assumption of linearity, a regression line was drawn using calculated slope and Y-intercept values for distribution of plot points of pre-post score pairings. Examination of plottings of average post-test scores for each pre-test value reveals a slight "S"-shaped curve going back and forth across this regression line, as diagrammed.

At the extremes of these plottings (i.e., as NCE pre-test values of 0 and 100 are approached) it can be observed that the average post-test values tend to drift back across the regression line and towards the mean (for the theoretical or normed national sample this mean is 50 NCE; for the sample of 27,021 school system students it is computed to be 43.44). This is a graphic representation of the regression towards the mean phenomenon.

The Pearson product-moment correlation coefficient between pre and post-test scores is sufficiently large enough at .67613; and the standard error of estimate is 12.526. Both of these statistics are based on the 27,021 grades 4-7 and 9-11 students for whom both pre and post-test scores were available.

The slope of the regression line is .6567, and since this slope value is considerably less than one, it signifies that the typical student's nationally normed reading comprehension ranking markedly declined between pre and post-test. However, a close examination of the plotted average post-test scores for each possible pre-test value indicates that between approximately the 24th NCE pre-test point and the 76th pre-test point the regression line appears to have nearly achieved a slope of 1.00, and the plotted points appear to have lost most of their curvilinear appearance. Since 24 NCE points from either end denotes the highest and lowest 11 percentile ranks, this translates into the highest and lowest two stanines (1,2 and 8,9). Because the school system utilizes both percentile ranks and stanines for classifying student performance, such a 'cut point' is convenient for a variety of program selection and administration reasons. From a visual examimation of the total scatter of plotted

points in Figure 6 and their positions relative to the regression line, it can readily be seen that the bottom-most students (between 0 and 24 pre-test NCE score) do better on the post-test than students in general. However, for students pre-testing between approximately 24 and 53 NCE points, the typical student performs several NCE points lower on the post-test than expected using the regression line alone. This translates into the nationally normed range of the 10th percentile to 55th percentile. The overall average post-test score was 43.44 NCE (37th percentile). The large central block of the system's students fall in this 10th to 55th percentile range. Since students in the lowest two stanines show much more relative progress than do students in the top two stanines, the greater post-test improvement for the lowest group suggests a relatively more effective educational program--possibly due to such things as the various compensatory programs servicing the lowest achievers. However, stanine 3, 4, and part of stanine 5 students do not evidence the same relative growth. This set of students represents the upper performance end of the compensatory student range (0 to 33rd percentile typically) and those students immediately above it. These visual observations suggest that either the compensatory programs do not service these students, or do not service them as effectively as they do the lowest students, or both. In either case, a review of educational programming across all grades--specifically for stanines 3 and 4 and the lower part of stanine 5--is warranted.

Assessing the Progress of Students at or Below the 33rd percentile on the Pre-test

It should be recognized that the special regression analysis mentioned in an earlier section is not simply the visual inspection process of descriptive data just presented. Such is a useful part of the overall analytic process, however. In this present section, minority, white and total student groups scoring at or below the 33rd percentile on the reading comprehension pre-test will have their post-test performance evaluated by using both the special regression (Title I Model C) and a pre-post norm-referenced (Title I Model A) evaluation models. Since the typical compensatory program selects students at or below the 33rd percentile (frequently using the CTBS Reading Comprehension Test), this system-wide, multi-grade analysis can be viewed as an overall evaluation of the total compensatory education program--since virtually all students in the group scoring below 33rd percentile received some type of compensatory education.

Separate regression lines and related statistics were created for minority, white and total student groups where each student in each group achieved a pre-test score above a 40.7 NCE value (33rd percentile). These constituted the comparison groups. In the absence of differential program effect it could be expected that the below 33rd percentile students should fall on the same regression line, and so data from the comparison group based regression line was used to create an expected (predicted) post-test score for each treatment group student (i.e., for each student having a pre-test score at or below the 33rd percentile rank). Figure 7 presents the comparison group based regression lines for

minority and white student subpopulations as well as for the total student comparison group.

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Insert Figure 7 here.

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Examination of these regression lines and related statistics denote that the minority subpopulation regression line runs nearly parallel to the white student regression line (having slopes of .805 and .802, respectively), but with the white regression line running about 2.5 NCE's above the minority line, which would account for some of the minority to white difference in pre to post gain for the top two-thirds of the student pre-test population. The total student group based regression line has a slightly greater slope, and it can be seen moving from the minority regression line towards the white regression line as pre-test scores increase. This happens because the proportion of whites in the total population increases as the test scores increase. It is noteworthy that the slope of .819 for the top two-thirds of the students represents a much steeper regression line than that for the total student population, which was .657; however, the regression lines have Y-intercepts of 6.08 and 14.50, respectively. This denotes that as one moves from the pre-test 33rd percentile towards the lowest pre-test percentile rank of one, that the actual post-test score is increasingly above that predictable from the above 33rd percentile rank group based regression line. Consequent special regression analysis results are presented in Table 9.

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Insert Table 9 here.

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For the total student group pre-testing at or below the 33rd percentile, the regression analysis predicted/expected mean post-test NCE was 28.76 with the actual mean post-test NCE of 32.83, resulting in an average gain of 4.07 NCE units. This contrasts with the norm-referenced approach where the actual mean pre-test NCE of 27.69 and actual post-test NCE yielded a mean NCE gain of 5.14. This average gain of slightly over one additional NCE unit is attributable to three inter-related factors:

1. The exceptional gains of the bottom two stanines of pre-test students was more than offset by the lower than expected performance of the third and fourth stanine (below 33rd percentile) pre-test students.

2. The slope of the top two-thirds of the students, on which the expectancies for the bottom third of the students was based, was much greater than the

3. The pre-post norm-referenced Model A has an inherently greater regression towards the mean distortion in this analysis than does the special regression Model C. This is due in large part to the use of the same pre and post-test (except for form and/or level), in conjunction with the use of a treatment group at the extreme low end of the pre-test distribution, and the use of the pre-test as the selection criterion.

Similar findings between regression analysis and norm-referenced results were found for both the minority and white student sub-populations analyzed separately, when using the total population-based comparison group. When a comparison group comprised only of similar ethnic group students was used (minority with minority and white with white), a slightly different result was found. The NCE gain score advantage for the pre-post norm-referenced evaluation over the special regression model using similar ethnic comparison groups was .8 NCE for minorities but 2.94 NCE's for whites.

Using the total comparison group population for both ethnic groups, the whites tended to show approximately one NCE more pre-to-post gain than minorities using both models. Although a seemingly slight amount, if one NCE additional minority-to-white discrepancy was added for each school year (and the analysis in question spanned only one academic year, 1980-81), a cumulative grade one through grade 12 reading disparity between minorities and whites would exceed ten NCE points--which is approximately the total disparity which currently exists between minority and white twelfth graders.

Assessing Progress of Students at or above the 67th Percentile on the Pre-test

Actual pre and post-test scores for students pre-testing below the 67th percentile were used to produce a regression line and related statistics for use in predicting post-test scores from pre-test scores for those students who pre-tested at or above the 67th percentile. Since the slope of the regression line for the total below 67th percentile pre-test group (.536) was less than the slope of the top two-third group (.819) and the total group (.657), its apparent overall rate of reading comprehension growth for the 1980-81 treatment year was correspondingly less than for either. However, the actual relationship was not perfrectly linear, particularly at the extremes. The number of students at the low extreme (stanines 1 and 2) was much greater than at the upper extreme (stanines 8 and 9) and also the pre-to-post regression toward the mean was much more pronounced for the low pre-test group. These facts impacted the computation of slope and Y-intercept values.

The minority and white subgroups of below 67th percentile pre-test students, when regressed separately, yielded interesting differences. Although both the minority and white groups' regression lines intercepted the Y-axis at nearly the same point (17.7 vs. 17.0), their slopes were sufficiently

different (.557 vs. .621) to cause the predicted post-test score for a white student to be nearly six NCE's higher than for a minority student at the 99 NCE pre-test point. See Figure 8 for a graphic and statistical display of this information.

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Insert Figure 8 here.

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A regression line based on the pre-test scores of the bottom two-thirds of students, compared with the regression line based on the pre-test scores of the top two-thirds of students, has:

1. a lesser slope (.595 vs. .819, and thus a lesser rate of growth);
2. a lesser correlation coefficient (.536 vs. .597, and thus a somewhat less pre-test to post-test predictive power and reliability);
3. a slightly greater standard error of the estimate, as would be expected from the preceding (12.60 vs. 12.35); and
4. a predictably higher Y-intercept value (16.69 vs. 6.08).

A graphic display with related statistics of these two regression lines is presented in Figure 9.

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Insert Figure 9 here.

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As with the evaluation of the bottom (using national norms) one-third pre-test students, the top (using national norms) one-third pre-test students were evaluated using both the pre-post norm-referenced model (Title I, Model A) and the Special Regression Analysis (Title I, Model C). In each instance, the CTBS Reading Comprehension Test was used as both the pre and post-measure (albeit, different forms and/or levels were used for consecutive testings). As, has been discussed, a regression

towards the mean effect of the extremely high or low pre-test scores at post-test time did occur. Since the pre-test served also as the selection criterion (which, strictly speaking, should not be done when using Model A, particularly with extreme groups), a related systematic bias was introduced in each case. For the bottom one-third pre-test group, it was found that Model A results generally ran about one NCE unit higher than counterpart Model C results--with regression towards the mean probably in excess of that amount. Interestingly, absolute differences between Models A and C results for the top one-third pre-test group are even more pronounced (with Model C results being consistently higher). The differences range from 9.97 to 12.83 NCE units. These results and related statistical detail are presented in Table 10.

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Insert Table 10 here.

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Top pre-test one-third minority, white and total student groups were analyzed separately, using the total comparison group for calculating the respective special regression expected/predicted post-test scores. In each of these three instances the Model A results yielded a negative change (from an average decline of -4.78 NCE units for whites to -6.91 NCE units for minority students).

The special regression results, however, were positive in each of the three instances (from an average gain of +4.33 NCE units for minorities to a full +7.38 NCE units for white students). When a minority only comparison group was used in calculating predicted top one-third minority scores, the actual observed average minority student score jumped from +4.33 NCE's to +5.92 NCE's above the predicted. Correspondingly, when the white only comparison group was used in calculating expected/predicted top one-third white student scores, the actual observed average white student score declined from an

average +7.38 NCE's to an average +5.19 NCE's above that predicted. Several comments are in order. The slope of bottom two-thirds regression line, on which the expected/predicted top one-third acores were based was much less than that for the top two-thirds. Since both regression lines contained the middle third data, net differences are attributable to differences in the extremes. This signifies that the relative growth rate of the top one-third student group was greater (which is not necessarily expected), in addition to the simple amount of growth being greater (which might be expected). Deflation of Model A results relative to Model C results for the top one-third group of students is much greater than the corresponding inflation of Model A results relative to Model C results for the bottom third group of students. In part, this is due to the greater influence of bottom half students on the regression line than the top half students, as a direct consequence of their numerical superiority. Differential student treatment and developmental factors are probably also at work. The analysis illustrates the dramatic differences which can be found between Model A and Model C, between treatment group performance assessments made using national norms versus those using a local comparison group. Since the special regression analysis (Model C) yielded statistically significant ($p < .01$) gains for each bottom and top one-third groups, it can be inferred that the middle one-third of the students do more poorly than could be predicted from the overall student performance. This inference is drawn from the fact that it is the only remaining segment of the overall student propulation for which the favorable comparisons for the top and bottom one-third of the students could be made. This suggests that the middle-third, the central block of students, suffers from relative educational neglect. Because they constitute a central block of students, they are also probably of central importance. There are special compensatory programs for stanine one and two students and special programs for gifted students in stanine eight and

nine, but there are very few special programs for the non-exceptional and "average", stanine four, five and six students. Perhaps future educational planning should consider development and implementation of special enhancement programs for the middle performance group of students as an equally important priority. The majority of students, of course, fall into this middle range.

Comparing Progress of Students in the THINK Program Grades with those in the non-THINK Program Grades

The remedial order of the Federal Court mandated that there be an affirmative reading program. The court-appointed Administrator for Desegregation included in his overall administrative response to this mandate a package program known as the THINK program. During the 1980-81 school year, implementation of the THINK program for all students in grades six through nine was accomplished. Since no city-wide reading comprehension pre-test was given to the 1980-81 eighth grade students (i.e. no end of 1979-80 year test for seventh graders or Fall 1980-81 test for those promoted eighth graders), only 1980-81 grades six, seven and nine data are included as THINK grade data where pre-test data are required for data analysis. Non-THINK program grades are defined as the remaining grades in the school system--kindergarten through five and 10 through 12. Of these non-THINK grades, only 1980-81 grades four, five, 10 and 11 had pre-test data. Relatedly, any analysis of the non-THINK grades requiring pre-test data is limited to data from these grades.

Assessment of the 1980-81 THINK program treatment effect on reading comprehension scores was done by using the non-THINK grades as a comparison group in a special regression analysis design. This somewhat unique adaptation of the special regression model is justified in terms of various technical and conceptual considerations. Regression analysis as applied gives a more complete description of what is transpiring along the full continuum of student performance than would a simple analysis of variance or covariance type of analysis. Problems

of differential-regression-towards-the-means effects between treatment and comparison groups are virtually non-issues since, unlike the previous analysis, both the treatment and comparison groups in these analyses are comparable in terms of the distribution of their respective pre-test scores. The integrity of these and all similar multi-grade analyses are in turn dependent upon the integrity of the tables for converting raw scores into standardized scores provided in the CTBS manuals. Such analyses assume that all NCE test scores across all grade levels and normed for different grade levels and test dates:

1. are interval measures;
2. represent the same theoretical (longitudinal as well as cross-sectional) population; and
3. represent the measurement of the same theoretical reading comprehension construct (although item difficulty and specific skills measured may certainly vary across test forms and levels).

Statistics of the regression lines for minority, white and total students in the 1980-81 non-THINK program grades were calculated and the resulting regression lines plotted in Figure 10. Although the Y-intercept (at pre-test NCE value of 0) for minority students is less than two NCE's different than for white students (14.45 vs. 12.62), the slope (representing the rate of pre to post-test growth relative to the national norms) for whites is greater than for minority students (.729 vs. .649) to an extent accounting for the white student line being approximately 6 NCE's above the minority regression line at the uppermost pre-test NCE value of 99.

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Insert Figure 10 here.

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When contrasting THINK with non-THINK grade students, in a similar manner, who pre-tested either above the 33rd percentile (40.7 NCE) or below the 67th percentile (59.3 NCE), little difference is found between the groups.

Graphic and statistical details of these comparisons are presented in Figures 11 and 12, respectively.

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Insert Figures 11 and 12 here.

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From these two figures and the statistics provided with them, it is clear that the two regression lines are less than two NCE units apart at all points along the X-axis. However, there is a much greater disparity between the regression lines derived from the top and bottom pre-test students. As was found in the preceding section, the rate of growth for top students is greater than for bottom students when comparing regression lines (which in both cases may be largely due to the comparatively poor performance of the middle-range students). This difference is much greater (over 10 NCE points at the Y-intercept) than the difference between THINK and non-THINK grade students. For a graphic display of these comparisons, along with related statistics, see Figure 13.

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Insert Figure 13 here.

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The preceding descriptive statistics and graphs are preliminary work leading up to the special regression analysis (Title I, Model C) and pre-post norm-referenced evaluation (Title I, Model A). Model A results reveal that neither minority, white or total THINK grade students' reading comprehension NCE scores changed significantly from pre to post-test. The average NCE change for white students in THINK grades was slightly positive (+.25 NCE), but was slightly negative for minorities (-.18 NCE). The average change for all THINK grades was slightly negative (-.07). When comparing actual post-test scores with expected scores (based on the total non-THINK grade student comparison group) a slightly positive (+.42 NCE) but statistically significant

difference ($p < .01$) was found between the average expected and average actual post-test reading comprehension NCE scores for the total THINK grade student group. However, when this analysis was done for THINK grade minority students only, an average negative change of -.25 NCE's was found. This was not significant at $p < .01$. The positive change ($p < .01$) found for the total THINK grade group was attributable to white THINK grade student performance alone. This group's actual average post-test NCE scores were 2.31 above those expected. Of all of the changes found during this particular set of analyses, only this white student group change of 2.31 NCE's is probably of notable (policy or curriculum impacting) importance. Because each THINK grade student group was regressed in the preceding series using the total non-THINK grade comparison group, and since consequential differences were found between white and minority performance, additional analyses were done using:

1. a minority-only comparison group for predicting minority THINK grade student performance, and
2. a white student-only comparison group for predicting white THINK grade student performance.

These supplemental analyses left the basic conclusions found above intact. The change for minority students--although now positive (+.28 NCE) was not significant. The change for THINK grade white students--although less in magnitude (+.94 NCE)--was significant ($p < .01$). These and other related statistics are reported in Table 11.

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Insert Table 11 here.

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One might tentatively draw the inference from this series of analyses that the THINK program enhances the reading comprehension performance of whites, but not of minority students. Such conclusions should probably be suggestive only and very tentative at this point in time for the following "pro and con"

considerations:

1. The THINK program, along with teacher and student reassignment, was in the process of being implemented during the 1980-81 school year. Thus, the full-year impact of a fully implemented THINK program for the duration is not assessable from 1980-81 data.

2. The THINK program is an extra expenditure and resource for students and not a replacement/alternative program. As such, it should be considered of no value, and not simply of equal value, if it does not demonstrate significantly greater student reading comprehension results than those achieved in grades which differ simply in not having this THINK program. The expressed purpose and reason for implementing the THINK program is to enhance student reading comprehension, particularly that of minority students.

A comparison of THINK and non-THINK student reading comprehension performance for both top and bottom student groups was also done. The general conclusions concerning all top and bottom students, presented in prior analyses, were found to apply to both THINK and non-THINK student groups. Largely due to regression towards the mean effects, the standard pre-post norm referenced evaluation yielded positive pre to post gains for the bottom pre-test students (+5.71 NCE's for THINK students and +4.76 NCE's for non-THINK students) and negative changes for top pre-test students (an average -6.43 NCE's for THINK students and -5.69 NCE's for non-THINK students). The use of the pre-post norm referenced evaluation (Title I Model A) is relatedly of doubtful validity in evaluating the performance of groups at the performance extremes. However, it can be noted that the bottom THINK students did about one NCE better, on the average, than did the non-THINK students. Conversely, the top THINK students did about one NCE worse, on the average, than did their non-THINK counterparts. Since the direction

and extent of regression towards the mean effect on bottom THINK students is comparable to bottom non-THINK students, and since such is also true in comparing top THINK with top non-THINK students, regressing towards the mean concerns should largely be neutralized in making these specific comparisons. Whether this simply means that the effect of the THINK program on bottom students is positive and on top students is negative (in terms of reading comprehension performance) needs to be researched further. With respect to these THINK/non-THINK comparisons, the special regression analysis yielded similar results. However, as was the case when analyzing all students in all grades in related prior analysis, special regression analysis mitigated the effects of regression towards the mean, yielding positive changes over expectancy for both top and bottom groups in both THINK and non-THINK grades. The comparison groups for the THINK "treatment" groups (bottom and top third student groups, respectively) were the remainder of the THINK population; the same was true with respect to the non-THINK comparison groups. These results and related statistics are presented in Table 12.

Insert Table 12 here.

Supplemental Assessment of the 1980-81 THINK Program Using ANCOVA

A comparison between THINK and non-THINK grade (main effects) post-test scores (dependent variable) controlling for

differences in pre-test scores (covariate) was done, using a ten percent random sample (2653). The pre-test (as covariate) was clearly a significant source of variation ($p < .001$), as expected from prior analyses which showed significant differences between grades using the total multigrade student group. When controlling for this source of pre-test variation, significant differences between THINK and non-THINK grade student groups were not found with respect to end of 1980-81 school year reading comprehension post-test scores. These results are presented in Table 13. These findings are consistent with related inferences drawn from the preceding regression analyses.

Insert Table 13 here.

Because prior analyses revealed important differences between minority and white students with respect to their reading comprehension score behavior, another analysis of covariance was done on this same ten percent random sample--but for whom race identification was available (2653 less 47 equals 2606)--adding racial group identification (minority/white) as a main effect factor. The results from this second ANCOVA analysis yielded the same conclusions as the first, with the addition of a significant difference being found between minority and white student post-test scores (even when differences in pre-test scores were controlled for), and the finding of no significant two-way interaction effect between the experimental group (THINK/non-THINK) main effect factor and the racial group (minority/white) main effect factor. These

and related statistics are presented in Table 14.

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Insert Table 14 here.

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Some Selected Student Out-migration Patterns During the Transition Years of Desegregation

As a consequence of the Remand Opinion and Remedial Order of the federal court dated February 6, 1978, a three phase plan for desegregation was begun in September, 1979.

A part of the desegregation plan was to decentralize the school system by subdividing it into clusters of schools (and, for purposes of desegregation, these clusters of schools were not geographically contiguous). By the 1981-82 school year, these clusters numbered seven. In Phase I, which began September 10, 1979, thirty-three schools in three clusters were involved:

. Collinwood Cluster elementary schools.

. Kennedy-Marshall Cluster senior high schools.

. East Tech-South Cluster junior high schools.

Phase II, which began at the start of the second semester of the 1979-80 school year, involved the desegregation of all remaining junior high schools.

Phase III, which began at the beginning of the first semester 1980-81 school year, involved desegregating all of the remaining elementary and high schools (in the Adams-Rhodes, Glenville-Lincoln West, East Tech-South, and John Hay-West Tech Clusters). At the end of Phase III the student assignment section of the

Remedial Order was fulfilled. Basic busing plans and patterns had been implemented.

Questions concerning the purported "white flight" phenomenon attendant to such court ordered desegregation activities predictably get discussed in the press and by the public. This section looks at selected data of this period of transition from a segregated to a desegregated system, and attempts to describe certain outmigration patterns. Because of the availability of related data and its probable relatedness to outmigration issues, the system-wide 1978-1979 grade five students were followed for the three consecutive years which coincided with the three phases of desegregation. For most of these students (i.e., those promoted each year), this involved 1978-79 grade five, 1979-80 grade six and 1980-81 grade seven. This represents the movement from elementary to secondary school and the necessary movement from an elementary building to a secondary (junior high school) building.

The 1978-1979 fifth graders were examined in terms of how many and which types of students outmigrated (left the system for any reason) during the transitional 1978-79, 1980-81 school years. It was thought plausible that the unusually high outmigration rate of students at those grade levels was almost entirely for reasons relating to desegregation, rather than due to the dropping out of school altogether--which phenomemon occurs much more frequently in the upper secondary grade levels (grades 9 through 11). These groups of end of 1978-79 grades five and six outmigrated students, as well as that residual group remaining in the system for the

1980-81 school year, were compared and contrasted with respect to race, sex, family income/poverty index (lunch code based), and 1978-79 and 1979-80 reading vocabulary and comprehension scores.

For purpose of the following analyses, students were sorted into three groups:

1. Those who appeared on the Spring, 1979 active pupil record file (APR) for the last time (i.e., out-migrated prior to the updating of the Spring, 1980 APR, presumably not being enrolled for most or all of the 1979-80 school year.)

2. Those students enrolled in both the 1978-79 and 1979-80 school year, and thus remaining on the updated Spring 1980 APR file, but who outmigrated prior to the updating of the Spring 1981 APR.

3. Those students enrolled in all three academic years under investigation (1978-79, 1979-80 and 1980-81), and who were the only students from this sample who appeared on the Spring, 1981 APR. (No in-migrated students were included in this analysis.)

In other words, the three student groups included in the analysis consisted of:

1. those who out-migrated after the first year;

2. those who out-migrated after the second year; and

3. those who were enrolled all three years.

It was found that the majority of students (533 out of 973 or 54.8%) of the original student sample leaving the school system following the 1978-79 or 1979-80 school years were white, although white students constituted only about one-third of the total original student sample (2436, or 34% of 7162). Of black students, 394 out of 4411 (8.93%) out-migrated during this same two-year period. This contrasts with 533 out of 2436 (21.88%) of the original whites who

outmigrated during the same period. An oversimplification would be to attribute this high white student outmigration to a stereotypic "white-flight" phenomenon. The unusually high rate of 8.9% of the blacks outmigrating suggests other significant dynamics at work.

Approximately four times as many whites outmigrated at the end of the spring, 1980, prior to moving into junior high seventh grade in the fall of 1980, as outmigrated at the end of the fifth grade, at the end of the 1978-79 school year. A similar ratio for black students was at work, although higher, at approximately a ratio of five to one. This suggests a specific avoidance to entering junior high school as a seventh grader in the system for the 1980-81 school year.

When the outmigration patterns of students of different family incomes are examined, even more significant differences (using frequency distributions and the χ^2 technique) are found than those outmigration patterns found between total black and white student groups. Those students from higher income families (of all racial groups) tended to outmigrate in much greater proportion than did students from lower family income. Family income/poverty level for purpose of this analysis was defined by a three point lunch code, with: those receiving free lunch at the lowest family income level (5869,or 81.9%); those receiving reduced price lunch (614,or 8.6%) at the next lowest family income level; and those paying the full student price (679 or 9.5%) for lunch having the

highest family income of these three categories.

Between sixth and seventh grade, for example, 26.2% (178 of 679) students from the highest family income category outmigrated; in contrast, only 8.8% (517 out of 5869) of those in the lowest family income category and 14.0% (86 out of 614) in the middle income (reduced priced lunch) category outmigrated. These findings strongly suggest that outmigration was largely a function of a student being from a comparatively high income family and was accelerated by the prospect of having to move from an elementary school to a junior high school. This was found true for the total group of all students, which had various racial identities.

Since prior research has shown that there is a significant relationship between family income of student and the academic achievement of the student, it comes as no surprise, when taken in conjunction with preceding findings, that those students who outmigrated following either the first or second year of desegregation (and who's families had higher incomes) had significantly higher reading comprehension and vocabulary test scores. Using national norms 9.83 percent (93 out of 946) of those students outmigrating scored in the top two stanines (top eleven percent nationally) on the spring, 1979 reading comprehension test, in contrast to 4.23 percent (236 out of 5582) of those students who remained in the system. The results for the spring, 1979 reading vocabulary were similar: 19.15 percent (181 out of 945) of out-migrating students versus 10.71 percent (598 out of 5582) of retained students scored in the top two stanines. In other words, students

in these top reading achievement groups have outmigrated in approximately twice the proportion that they have been retained in the system. The better reading students left the system at a disproportionate rate.

The analysis of this data revealed that girls did not outmigrate (transfer out of the system) at a rate significantly different than for boys. See Appendix I for related statistical detail pertaining to all of the preceding findings.

As a follow-up to this analysis subseries, additional research was done on this group of students who remained enrolled at least to the 1980-81 school year (grade seven for most). Even though high family income and white students had disproportionately outmigrated during the transitional desegregation years of 1978-79 and 1979-80, of those remaining, there were significantly more white than minority students, proportionately, in the higher family income category (19.2% of the whites vs. 6.4% of the minority). Relatedly, 85.9% of all minority students fell into the lowest family income category (i.e., received free lunch), in contrast to 66.3% of all white students. It was strongly suspected from these and related previous findings, that were family income controlled for, the white/minority academic performance differences found would be dramatically reduced or eliminated. To accomplish the answering of related questions, separate white to minority comparisons were made with respect to reading performance, for each of the three family income categories of students. This was accomplished by using a two by nine, racial group by reading test stanine score categories, with frequency crosstabulations in conjunction with chi

square tests and other statistics computed, for both the total group and for each of the three separate family income based groups of students.

The lowest family income group (i.e., free lunch) of students was investigated first. Although the difference between minority and white students in terms of average stanine ranks was much less when restricted to the low family income group than for the total group of all family income students (which had significantly more whites in the upper family income categories), there still were found significant differences between whites and minority students in this lowest family income group of students (i.e., those receiving free lunch). However, this (free lunch based) family income measure is a gross measure, and does not make desirable distinctions between families in extremely destitute circumstances from those just below the free lunch cut off point. It must be remembered that 80.5 percent of all of the students in this study sample fell into this lowest family income (free lunch) category. Were it possible to break this large percent of students down into more precise family income categories, and to analyze each category separately, as above, significant differences between minority and white students in terms of reading comprehension test scores would probably be further reduced or disappear altogether. This statement is based on both prior analyses as well as those that immediately follow.

The second subgroup to be examined in a similar fashion was comprised of those students in the "middle" family income group (i.e., those students who received reduced price lunches). Of these 483

students, 58.6% were minority and 41.4% were white. No significant differences ($p<.05$) were found between the minority and white students with respect to either the 1979-80 (pre-test) or 1980-81 (post-test) CTBS reading comprehension scores. This result was also found for the 1980-81 (post-test) reading vocabulary score; but not for the 1979-80 reading vocabulary score. In terms of reading comprehension scores, it is clear that there are no significant differences between minority and white students who received reduced price lunches (i.e., who's families are "middle income" using the categorization described). Interestingly, there was a moderate difference ($p=.027$) between minority and white groups with respect to sex composition . The white students were comprised of a greater proportion of male students (55.5 percent) than were the minority students (44.9 percent). This contrasts with the finding of no such sex based significant difference for the total group of students with varying family incomes.

The third and final group to be examined in this manner were those students in the highest of the three family income categories used (i.e., students who paid full price for their school lunch). This group of 498 students was 46.6 percent minority and 53.4 percent white students. The overall ratio of males to females was 52.4 percent to 47.6 percent. The proportion of males in the minority student group was 48.3 percent, and for the white student group it was 56.0 percent, which proportions were not significantly different ($p=.102$). Also, there were no significant differences ($p<.05$) between minority and white "high family income" students with respect to any of the four CTBS reading test scores ("pre" and "post" reading comprehension and vocabulary).

Based on these analyses, it is clear that when family income is controlled for, significant reading achievement differences between minority and white students are either greatly reduced or disappear. This suggests--at least as far as what the CTBS reading tests measured in the Cleveland Public Schools during the 1979-80 and 1980-81 school years--that minority-to-white student reading discrepancies are largely, if not also primarily, a function of family income differences. Therefore, the upward enhancement of poor minority students' reading scores will require instructional strategies uniquely adapted to students from impoverished family backgrounds. See Appendix J for additional statistical detail.

Summary of Supplemental Findings

In this section reading comprehension scores were researched in a number of follow-up, supplemental ways. These supplemental findings are summarized as follows:

1. The average reading comprehension and vocabulary scores of those students with better attendance were higher than for those students with poorer attendance.

2. Those students with poorer attendance tended to be: older, more frequently behind normal grade level, from a lower income family, male, and white.

3. Those students with lowest reading comprehension post-test scores tended to: have lower reading vocabulary scores and lesser reading comprehension gains, be older and behind normal grade level, be from a lower income family, and be male and black.

4. Of the seven K-12 grades with available data, the two grades reflecting the greatest proportion of declining scores were grades four and seven, both of which represent reassignment and articulation grades for the majority of students.

5. Students in general pre-testing at the bottom two stanines (bottom 11%) do relatively/proportionately better than those nearer to the middle stanines of 3, 4 and 5; possibly indicating that special compensatory educational programs, which are available to bottom but not nearly as much to middle performing students, are the reason for this difference in favor of the lowest students.

6. Two different analytic strategies indicated that the total group of 1980-81 students pre-testing at or below the 33rd percentile did significantly better than expected (by an average of 4.07 and 5.14 NCE's, respectively); this basic result was also essentially true for both white and minority students. However, white students did even better than minority students, except when each racial group was compared to its own racial comparison group counterparts rather than to the total student comparison group. This is because whites pre-testing above the 33rd percentile rank showed better gains by post-test than their minority counterparts, and thus became a more rigorous comparison group than the minority student comparison group.

7. Two analytic methods for evaluating the pre-to-post test performance of those top students pre-testing at

or above the 67th percentile rank (using national rather than large city norms), yielded disparate results. When this top third group was compared to nationally normed statistics, these top students in general declined an average of 6.03 NCE's (-6.91 NCE's for minorities; -4.78 NCE's for whites). This was due to both the invalidating factor of regression towards the mean found operating on groups selected on the basis of extreme scores, and the fact that large cities generally place below the national norms in test performance. The second analytic method (and on the whole more valid) uses the remaining (i.e., students pre-testing below 67th NCE's) Cleveland Public School students as the comparison group. This analysis reduces the regression towards the mean effect, retains the desirable interval data features of a standardized test, but in effect yields results which are comparisons anchored on local norms. This second analytic method yielded an average post-test gain over predicted/expected for all students of +5.54 NCE's (+4.33 for minorities and +7.38 for whites). When restricting the comparison student group for minorities to minority students, and for whites to white students, the average gain became +5.92 for minorities and +5.19 for whites. It can be inferred that the middle group of students do more poorly than would be predicted from overall student performance.

8. A special package program known as the THINK program was implemented for all students in selected grades by or during the 1980-81 school year. A number of analyses were done to assess if the reading comprehension achievement change for students in those grades was significantly better than for those in the remaining grades. No educationally significant differences in favor of the THINK grades (whether comparing total, racial, top or bottom student groups) were found for the 1980-81 school year. However, a special regression analysis yielded a statistically significant ($p < .01$) .42 NCE enhancement of THINK grade students over expected. When examining minority and white groups separately, statistically significant ($p < .01$) gains were found only for whites (+2.31 NCE's using total comparison group and .94 NCE using whites only comparison group), and not for minorities (-.25 NCE using the total comparison group and +.28 NCE using the minority only comparison group). Low one-third pre-test THINK students do slightly better (less than 1 NCE for either analytic method) than do low one-third pre-test non-THINK students; the reverse is true for top one-third students. This suggests that low performing white students were the primary beneficiaries of the 1980-81 THINK program. Analysis of covariance results failed to demonstrate differences ($p < .05$) between 1980-81 THINK and non-THINK grade students reading

comprehension gains or for the interaction between THINK and race groups, but it did demonstrate such differences ($p < .001$) between minority and white students and between THINK and non-THINK grades with respect to reading comprehension pre-test scores.

9. Statistically speaking, higher family income was a more significant factor in predicting student out-migration than was race, although the white student group (which had proportionately more high family income students than did the minority group) out-migrated at a higher rate than did the minority student group. Related to family social economic status, the commensurately higher achieving (reading comprehension) students of all races out-migrated at a greater rate than did those lower academically achieving (in terms of reading comprehension and vocabulary) students. This student out-migration was also accelerated by the prospect of a student having to move from an elementary school to a junior high school. However, girls did not out-migrate at a rate significantly different than for boys.

TABLE 8

PERCENT (#) OF THOSE 1980-81 POST-TEST TAKING STUDENTS
WHO WERE ALSO PRESENT AT THE PRIOR 1979-80 TESTING,
BY RACE AND LUNCH CODE GROUPS (GRADES 4,5,6,7, AND 9,10,11)

	ALL MINORITY STUDENTS	WHITE STUDENTS
FREE LUNCH (LOWEST SES)	71.7 (14,999/20,910)	63.3 (3396/5362)
REDUCED PRICE LUNCH	79.0 (1442/1825)	70.3 (766/1089)
STUDENT PAID LUNCH (HIGHER SES)	85.5 (1324/1549)	75.6 (904/1196)
COMBINED TOTAL (INCLUDING THOSE NOT GETTING SCHOOL LUNCH)	71.0 (19,856/27,952)	64.4 (6,649/10,331)

TABLE 9

THE EVALUATION OF THE BOTTOM ONE-THIRD READING COMPREHENSION MINORITY, WHITE AND TOTAL STUDENT GROUPS* USING PRE-POST NORM-REFERENCED AND SPECIAL REGRESSION ANALYSIS EVALUATION MODELS**

Group	N	Pre-Post Norm Referenced Evaluation (Title I Model A)				Special Regression Analysis (Title I Model C)					
		Pretest NCE $\bar{X}$*	Post Test NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Number Who Gained +7 (+4) NCE pts. or More	Expected Post test NCE $\bar{X}$	Observed Post tost NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Comparison Group Based Regression Line: Pre/Post r (with N)	Slope	Y Intercept
Using Total Comparison Group For Regressing:											
All Pupils***	11,503	27.69	32.83	+5.14	5190 (6263)	28.76	32.83	+4.07	.597(15,518)	.819	6.08
Minorities	9,117	27.47	32.44	+4.97	4130 (5007)	28.59	32.44	+3.86	.597(15,518)	.819	6.08
Whites	2,198	28.54	34.26	+5.71	1060 (1256)	29.46	34.26	+4.79	.597(15,518)	.819	6.08
Using Minority Comparison Group For Regressing:											
Minorities	9,117	27.47	32.44	+4.97	4130 (5007)	28.25	32.44	+4.20	.566(10,739)	.805	6.13
Using White Comparison Group For Regressing:											
Whites	2,198	28.54	34.26	+5.71	1060 (1256)	31.49	34.26	+2.77	.623(4,451)	.802	8.58

*The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used; the bottom one-third is defined as that student group scoring at or below the 33rd percentile (40.7 NCE) on the reading comprehension pre-test.

**The pre-post norm-referenced evaluation model and the special regression evaluation model are Title I evaluation models A and C, respectively.

***Includes students for whom racial group was not recorded.

TABLE 10

THE EVALUATION OF THE TOP ONE-THIRD READING COMPREHENSION MINORITY, WHITE AND TOTAL STUDENT GROUPS* USING PRE-POST NORM-REFERENCED AND SPECIAL REGRESSION ANALYSIS EVALUATION MODELS**

Group	N	Pre-Post Norm Referenced Evaluation (Title I Model A)				Special Regression Analysis (Title I Model C)					
		Pretest NCE $\bar{X}$*	Post Test NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Number Who Gained +7 (+4) NCE pts. or More	Expected Post test NCE $\bar{X}$	Observed Post test NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Comparison Group Based Regression Line: Pre/Post r (with N)	Slope	Y Intercept
Using Total Comparison Group For Regressing:											
All Students***	4320	69.82	63.79	-6.03	672 (949)	58.25	63.79	+5.54	.536(11,348)	.595	16.69
Minorities	2543	69.00	62.09	-6.91	359 (511)	57.76	62.09	+4.33	.536(11,348)	.595	16.69
Whites	1662	71.02	66.24	-4.78	313 (438)	58.96	66.24	+7.38	.536(11,348)	.595	16.69
Using Minority Comparison Group For Regressing:											
Minorities	2543	69.00	62.09	-6.91	359 (511)	56.18	62.09	+5.92	.510(12,431)	.557	17.73
Using White Comparison Group For Regressing:											
Whites	1662	71.02	66.24	-4.78	313 (438)	61.05	66.24	+5.19	.535(4,987)	.621	16.98

*The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used; the top one-third is defined as that student group scoring at or above the 67th percentile (59.3 NCE) on the reading comprehension pre-test.

** The pre-post norm-referenced evaluation model and the special regression evaluation model are Title I evaluation models A and C, respectively.

*** Includes 115 students for whom racial group was not recorded; comparison group based regression line statistics were calculated from random sample data.

TABLE 11

AN EVALUATION OF THE THINK PROGRAM READING COMPREHENSION** MINORITY, WHITE AND TOTAL STUDENT GROUPS*** USING PRE-POST NORM-REFERENCED AND SPECIAL REGRESSION ANALYSIS EVALUATION MODELS****: TOTAL, MINORITY AND WHITE NON-THINK GRADE STUDENTS PROVIDED THE DATA FOR THE COMPARISON GROUPS***

Group	N	Pre-Post Norm Referenced Evaluation (Title I Model A)				Special Regression Analysis (Title I Model C)					
		Pretest NCE $\bar{X}$*	Post Test NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Number Who Gained +7 (+4) NCE pts. or More	Expected Post test NCE $\bar{X}$	Observed Post test NCE $\bar{X}$*	$\bar{X}$ NCE Difference	Comparison Group Based Regression Line***** Pre/Post r (with N)	Slope	Y Intercept
Using Total Non-THINK Comparison Group For Regressing:											
All Students	11,644	44.20	44.14	-.07	3338 (4395)	43.72	44.14	+.42*	.662(9,949)	.680	13.64
Minorities	8,635	42.48	42.30	-.18	2447 (3207)	42.55	42.30	-.25	.662(9,949)	.680	13.64
Whites	2,969	49.14	49.39	+.25	891 (1188)	47.08	49.39	+2.31*	.662(9,949)	.680	13.64
Using Minority Non-THINK Comparison Group For Regressing:											
Minorities	8,635	42.48	42.30	-.18	2447 (3207)	42.02	42.30	+.28	.634(10,742)	.649	14.45
Using White Non-THINK Comparison Group For Regressing:											
Whites	2,969	49.14	49.39	+.25	891 (1188)	48.44	49.39	+.94*	.707(3680)	.729	12.62

*$p < .01$

**The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used.

***Data analysis of the THINK program (treatment group; grades 6 through 9 during 1980-81) and the Non-THINK group (comparison group; K-5 and 10-12 during 1980-81) was restricted to grades for which both pre- and post-test data is available (grades 6,7 & 9 for THINK program; grades 4,5,10 & 11 for Non-THINK groups).

****The pre-post norm-referenced evaluation model and the special regression evaluation model are Title I evaluation models A and C, respectively.

*****The total Non-THINK comparison group used for the special regression analysis was a large random sample of all Non-THINK students; the minority and white Non-THINK comparison groups included all available minority and white students, respectively.

TABLE 12

A COMPARISON OF THINK AND NON-THINK STUDENT*** READING COMPREHENSION PERFORMANCE** FOR BOTH TOP AND BOTTOM STUDENT GROUPS****

Group	N	Pre-Post Norm Referenced Evaluation (Title I Model A)				Special Regression Analysis (Title I Model C)					
		Pretest NCE $\bar{X}$*	Post Test NCE $\bar{X}$*	X NCE Difference	Number Who Gained +7 (+4) NCE pts. or More	Expected Post test NCE $\bar{X}$	Observed Post test NCE $\bar{X}$*	X NCE Difference	Comparison Group Based Regression Line***** Pre/Post r (with N)	Slope	Y Intercept
Pre-Test Less Than or Equal to 40.7 NCE:											
THINK Students	4643	27.77	33.48	+5.71*	2211 (2652)	29.17	33.48	+4.31*	.615(7001)	.806	6.79
Non-THINK Students	6860	27.63	32.39	+4.76*	3061 (3611)	28.43	32.39	+3.96*	.584(8517)	.830	5.49
Post-Test Greater Than or Equal to 59.7 NCE:											
THINK Students	1982	69.75	63.32	-6.43*	276 (421)	57.35	63.32	+5.97*	.523(9662)	.557	18.51
Non-THINK Students	2338	69.88	64.19	-5.69*	396 (528)	57.66	64.19	+6.53*	.521(9211)	.584	16.85

* $p<.01$

**The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used.

***Data Analysis of the THINK Program (treatment group; grades 6 through 9 during 1980-81) and the Non-THINK group (comparison group; k-5 and 10-12 during 1980-81) was restricted to grades for which both pre- and post-test data is available (grades 6, 7 & 9 for THINK program; grades 4,5,10 & 11 for Non-THINK groups).

****The top student group is comprised of those whose pre-test comprehension score was at or above the 67th percentile rank (59.7 NCE); the bottom group is comprised of those students whose pre-test score was at or below the 33rd percentile rank (40.7 NCE).

*****Data Analysis of the THINK program (treatment group; 1980-81 grades 6 through 9) and the Non-THINK group (comparison group; 1980-81 grades k-5 and 10-12) was restricted to grades for which both pre- and post-test data is available (grades 6,7 & 9 for THINK program; grades 4,5,10 & 11 for the Non-THINK group). Comparison groups for THINK "treatment" groups are remainder of THINK population: the same is true for Non-THINK comparison groups

TABLE 13

A COMPARISON OF 1980-81 THINK PROGRAM* AND NON-THINK PROGRAM* GRADES IN TERMS OF POST-TEST CTBS READING COMPREHENSION NCE SCORES**, WITH PRE-TEST SCORES** THE COVARIATE (USING A TEN PERCENT RANDOM SAMPLE)

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Covariate: CTBS Reading Comprehension Pre-Test	368394.875	1	368394.875	2219.427	<.001
Main Effects: THINK vs. Non-THINK Grades	18.000	1	18.000	.108	.742
Explained	368412.875	2	184206.438	1109.768	<.001
Residual	439864.250	2650	165.986		
Total	808277.125	2652	304.780		

	THINK	Non-THINK	Total
Post-Test Mean (N)	44.62 (1119)	42.96 (1534)	43.66 (2653)

*For 1980-81 the THINK program grades were 6 through 9, with pre-post data available for grades 6,7 and 9; the Corresponding non-THINK grades were K-5 and 10-12 with pre-post data available for grades 4,5, 10 and 11. ANCOVA results were necessarily restricted to this pre-post data.

**The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used.

TABLE 14

A COMPARISON OF THINK/NON-THINK GRADES* AND MINORITY/WHITE STUDENTS IN TERM OF POST-TEST CTBS READING COMPREHENSION NCE SCORES**, WITH PRE-TEST SCORES** THE COVARIATE

Source of Variation	Sum of Squares	DF	Mean Square	F	Significance of F
Covariate: CTBS Reading Comprehension Pre-Test	357677.625	1	357677.625	2166.070	<.001
Main Effects:	2818.938	2	1409.469	8.536	<.001
THINK/Non-THINK Grades	25.162	1	25.162	.152	.696
Minority/White Students	2790.156	1	2790.156	16.897	<.001
Two-Way Interaction: Between THINK/Non-THINK AND Minority/White	54.375	1	54.375	.329	.566
Explained	360550.938	4	90137.688	545.867	<.001
Residual	429496.563	2601	165.127		
Total	790047.500	2605	303.281		

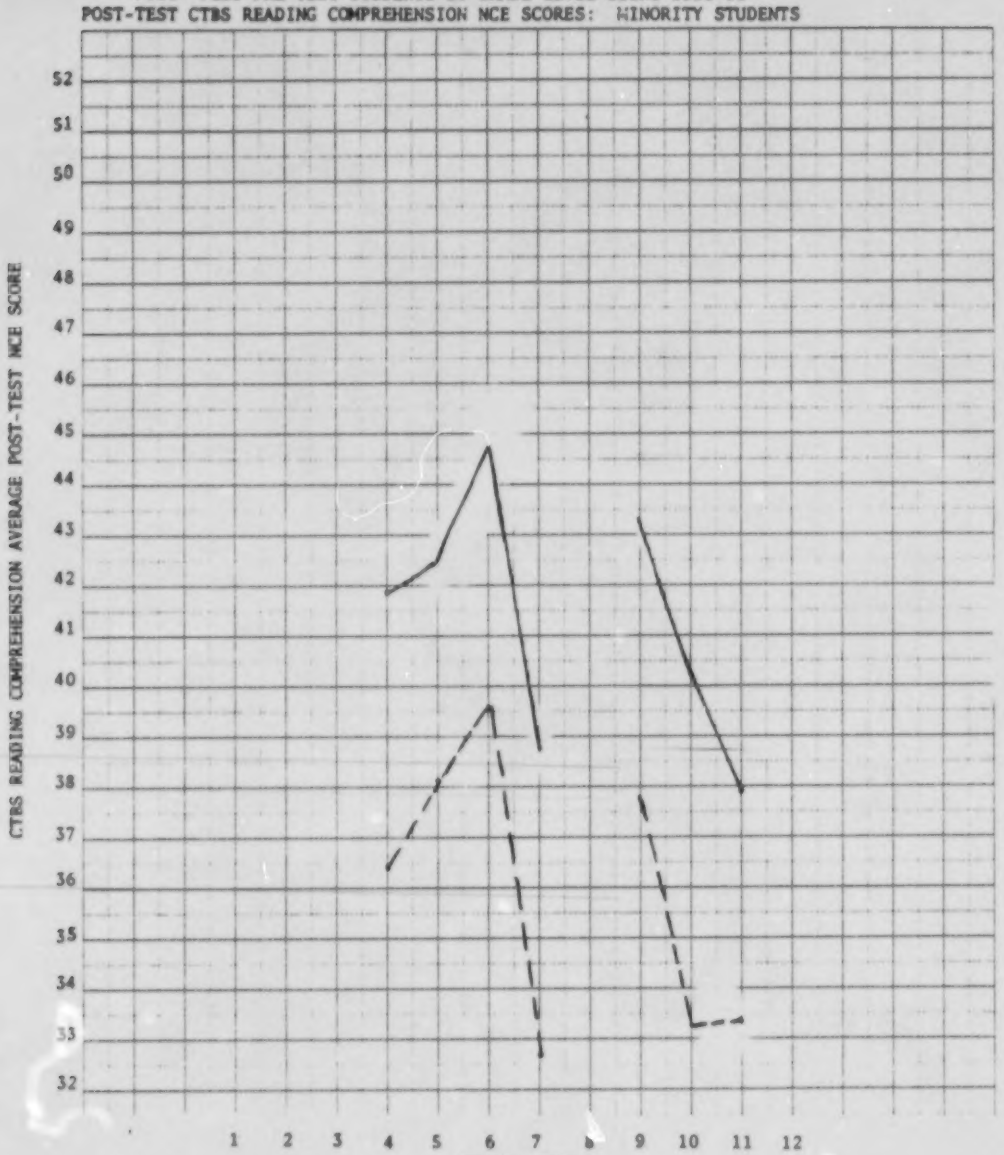
Post-Test Means (N) for:	THINK Grades	Non-THINK Grades	All Grades
Minority Students	42.76 (840)	41.44 (1142)	42.00 (1982)
White Students	49.92 (276)	47.18 (348)	48.40 (624)
All Students	44.53 (1116)	42.78 (1490)	43.53 (2606)

*For 1980-81 the THINK program grades were 6 through 9, with pre-post data available for grades 6,7 and 9; the non-THINK grades were K-5 and 10-12, with pre-post data available for grades 4,5,10 and 11. ANCOVA results were necessarily restricted to this pre-post data.

**The nationally normed NCE scoring units for the Comprehensive Test of Basic Skills were used.

FIGURE 4

A COMPARISON OF POST-TEST ONLY STUDENTS WITH
POST- PLUS PRE-TEST STUDENTS BY GRADE LEVEL USING 1980-81
POST-TEST CTBS READING COMPREHENSION NCE SCORES: MINORITY STUDENTS

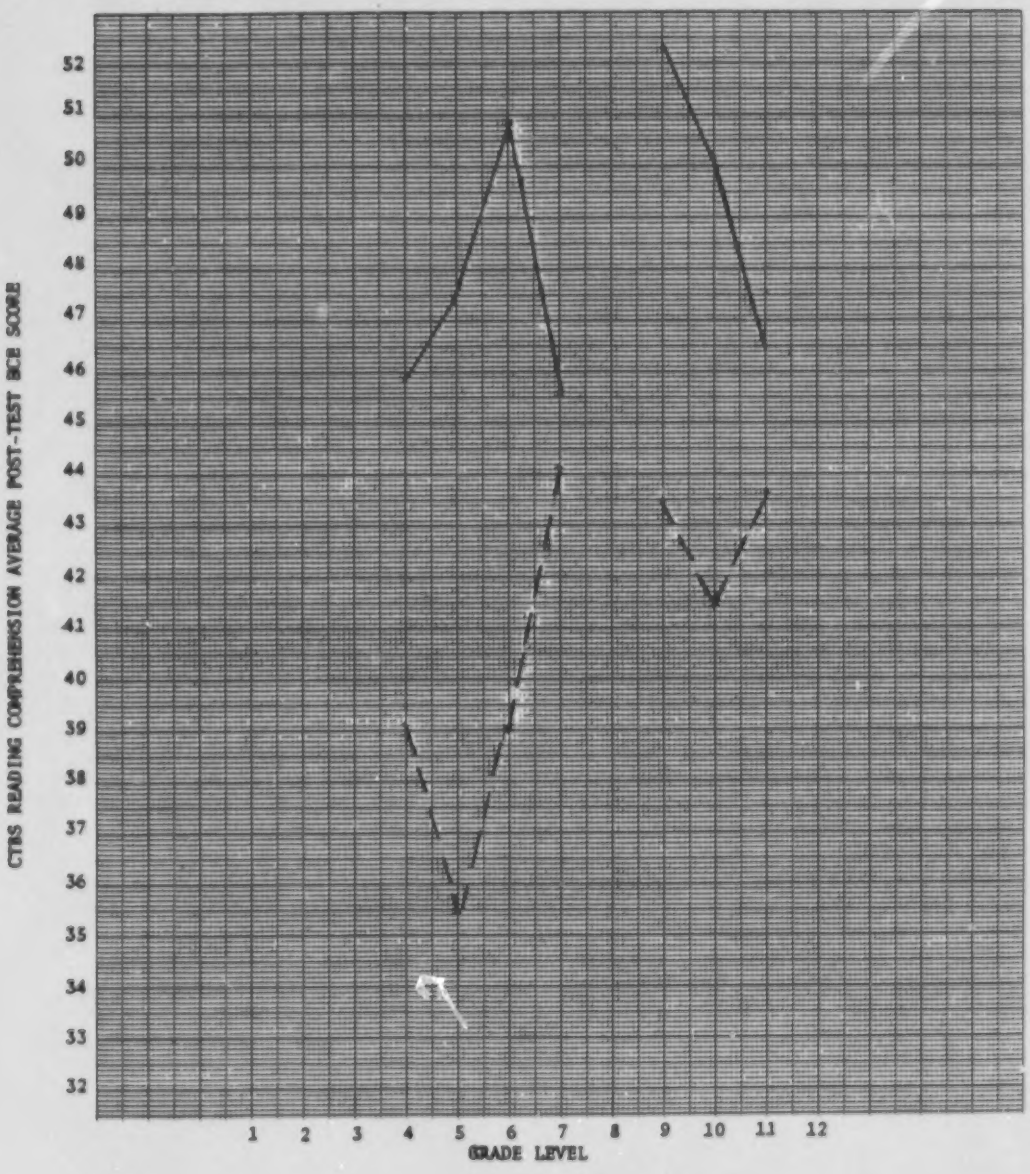


NO. OF SCORES:	1	2	3	4	5	6	7	8	9	10	11	12
POST ONLY				632	402	357	489		348	476	361	
PRE & POST				3613	3861	3498	2993		2144	2036	1511	

POST PLUS PRE-TEST STUDENTS ————
POST-TEST ONLY STUDENTS ----------

FIGURE 5

A COMPARISON OF POST-TEST ONLY STUDENTS WITH
POST- PLUS PRE-TEST STUDENTS BY GRADE LEVEL USING 1980-81
POST-TEST CTBS READING COMPREHENSION NCE SCORES: WHITE STUDENTS

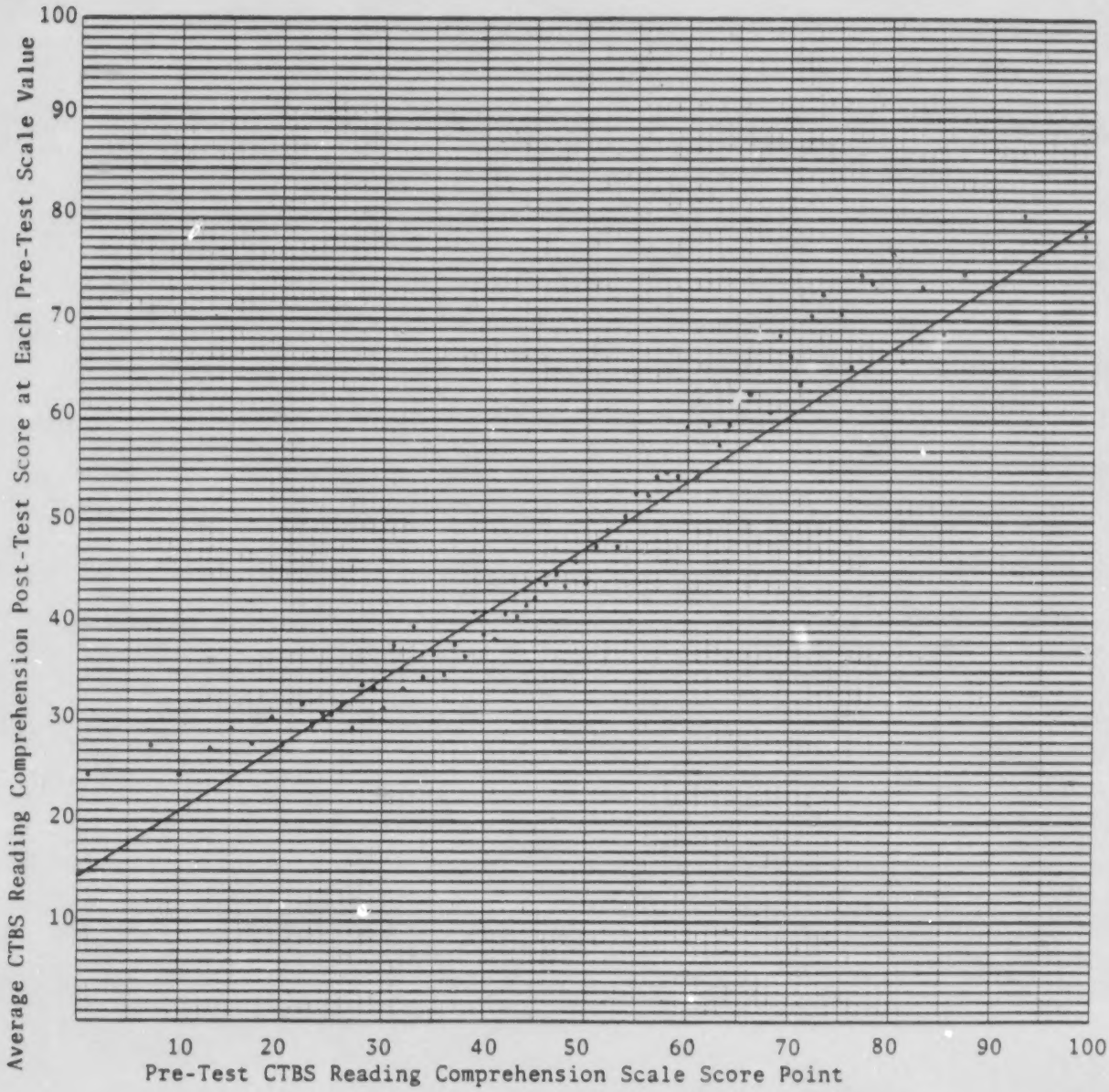


NO. OF SCORES:	1	2	3	4	5	6	7	8	9	10	11	12
POST ONLY				201	222	472	746		369	312	251	
PRE & POST				1260	1306	1313	1013		643	592	522	

POST PLUS PRE-TEST STUDENTS ——————
POST-TEST ONLY STUDENTS ----------

FIGURE 6

A PLOT OF AVERAGE 1980-81 POST-TEST NCE SCORES
AT EACH PRE-TEST SCALE VALUE*: ALL STUDENTS



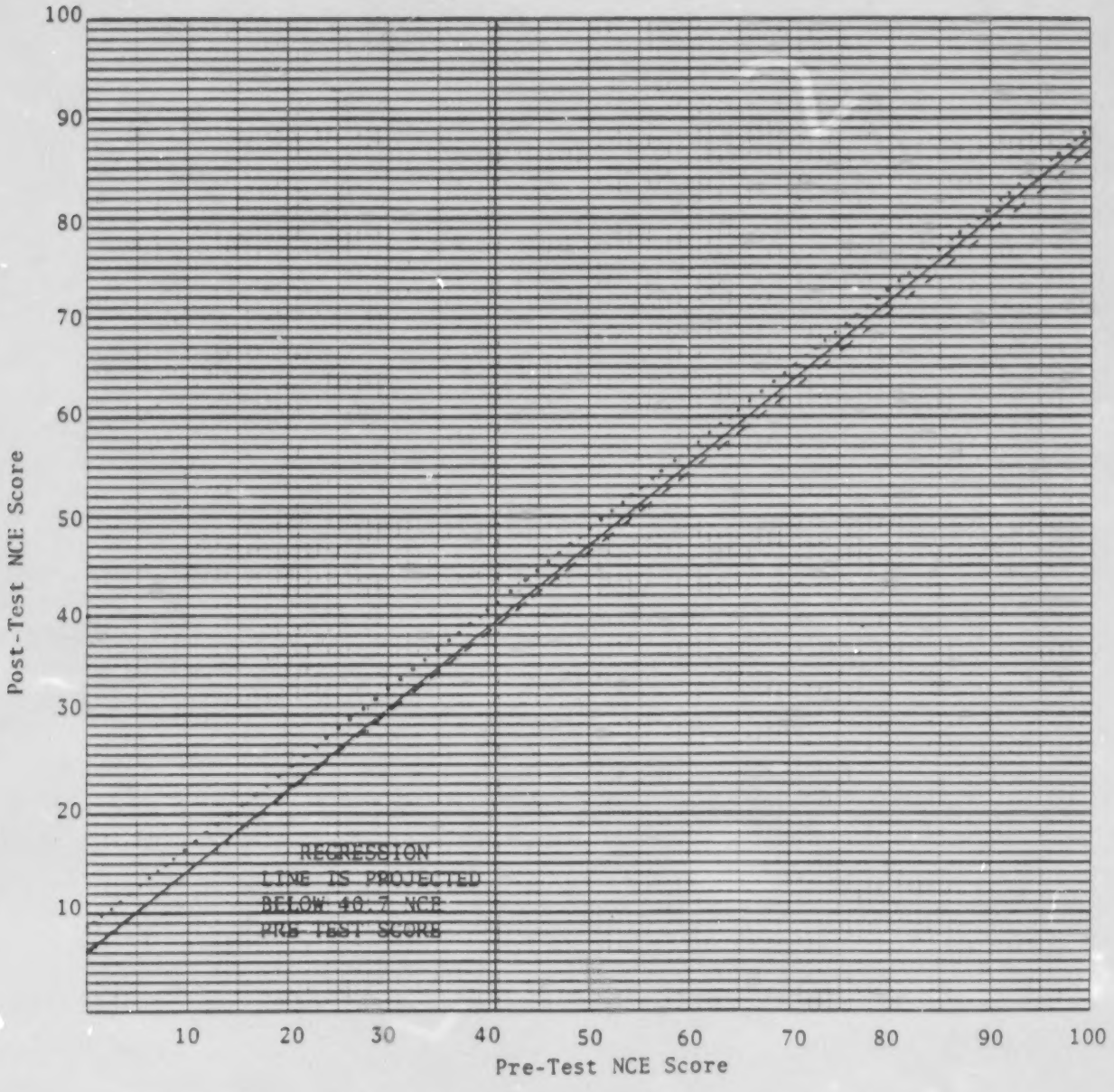
Y - Intercept = 14.503
Slope = .6567

r = .67613
Standard error of estimate = 12.52625

* The number of post-test scores averaged at each pre-test scale value point varies, typically becoming fewer at the extremes of the distribution. All students in all grades for which both pre and post-test scores were available (4-7 and 9-11) were included. The overall average NCE score for these 27,021 students was 43.44.

FIGURE 7

A COMPARISON OF MINORITY, WHITE AND TOTAL STUDENT GROUP REGRESSION LINES FOR SAMPLE WHERE PRE-TEST SCORES ARE GREATER THAN 40.7 NCE (33RD PERCENTILE)*



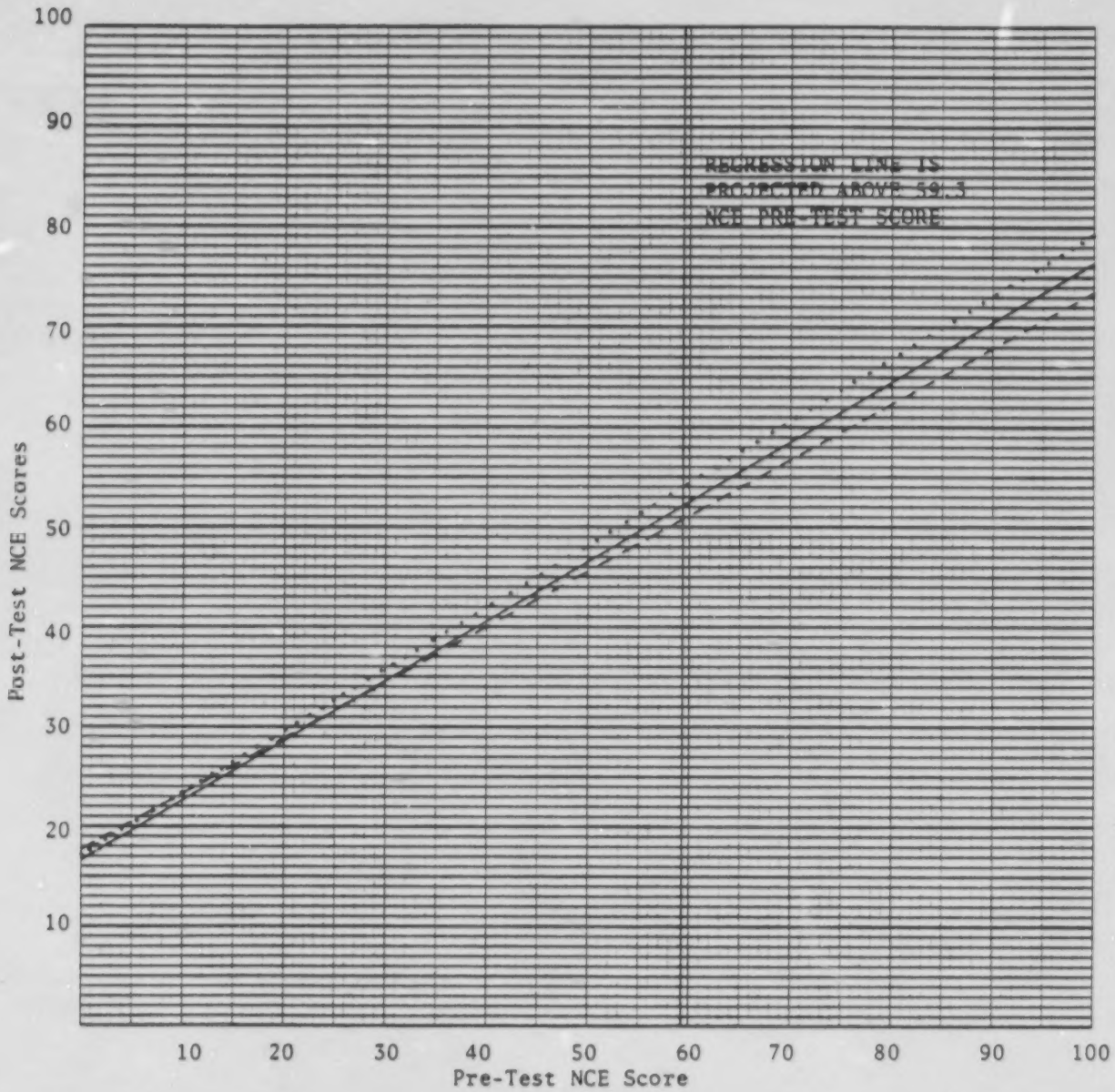
	All Students (_____)	Minorities (- - - - - -)	Whites (·····)
Number of Cases	15,518**	10,739	4,451
Pearson's r	.597	.566	.623
Std. Err. of Est.	12.35	12.22	12.54
Y-Intercept	6.08	6.13	8.58
Slope	.819	.805	.802

* Statistics based on those scoring above 33rd percentile (40.7 NCE) on pre-test, with regression lines projected below 40.7 NCE pre-test point.

** Includes 328 students whose racial group was not recorded.

FIGURE 8

A COMPARISON OF MINORITY, WHITE AND TOTAL STUDENT GROUP BASED REGRESSION LINES FOR SAMPLE WHERE PRE-TEST SCORES ARE LESS THAN 59.3 NCE (67 PERCENTILE)*



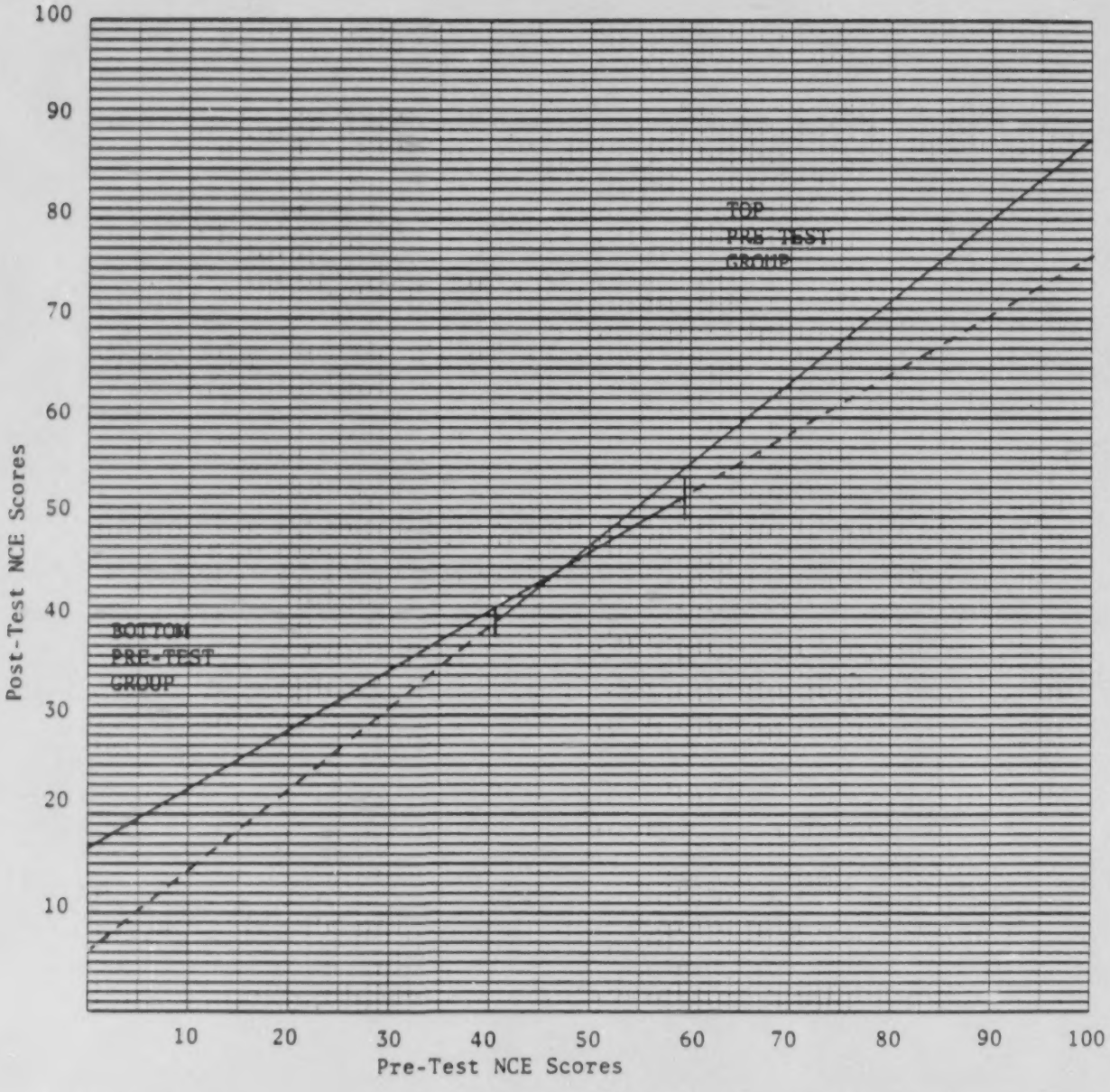
	All Students	Minorities	Whites
	(————————)	(--------)	(....)
Number of Cases	11,348 **	12,431	4,987
Pearson's r	.536	.510	.535
Std. Err. of Est.	12.60	12.59	12.74
Y-Intercept	16.69	17.73	16.98
Slope	.595	.557	.621

* Statistics are based on those scoring below 67th percentile (59.3 NCE) on pre-te: with regression line projected above the 59.3 NCE pre-test point.

**Includes students whose racial group was not recorded; also, is a random sample.

FIGURE 9

A COMPARISON OF THE TOP TWO-THIRDS
WITH THE BOTTOM TWO-THIRDS STUDENT GROUPS
IN TERMS OF PRE-TEST NCE SCORES USING
PRE TO POST TEST REGRESSION LINES FOR
MAKING COMPARISONS



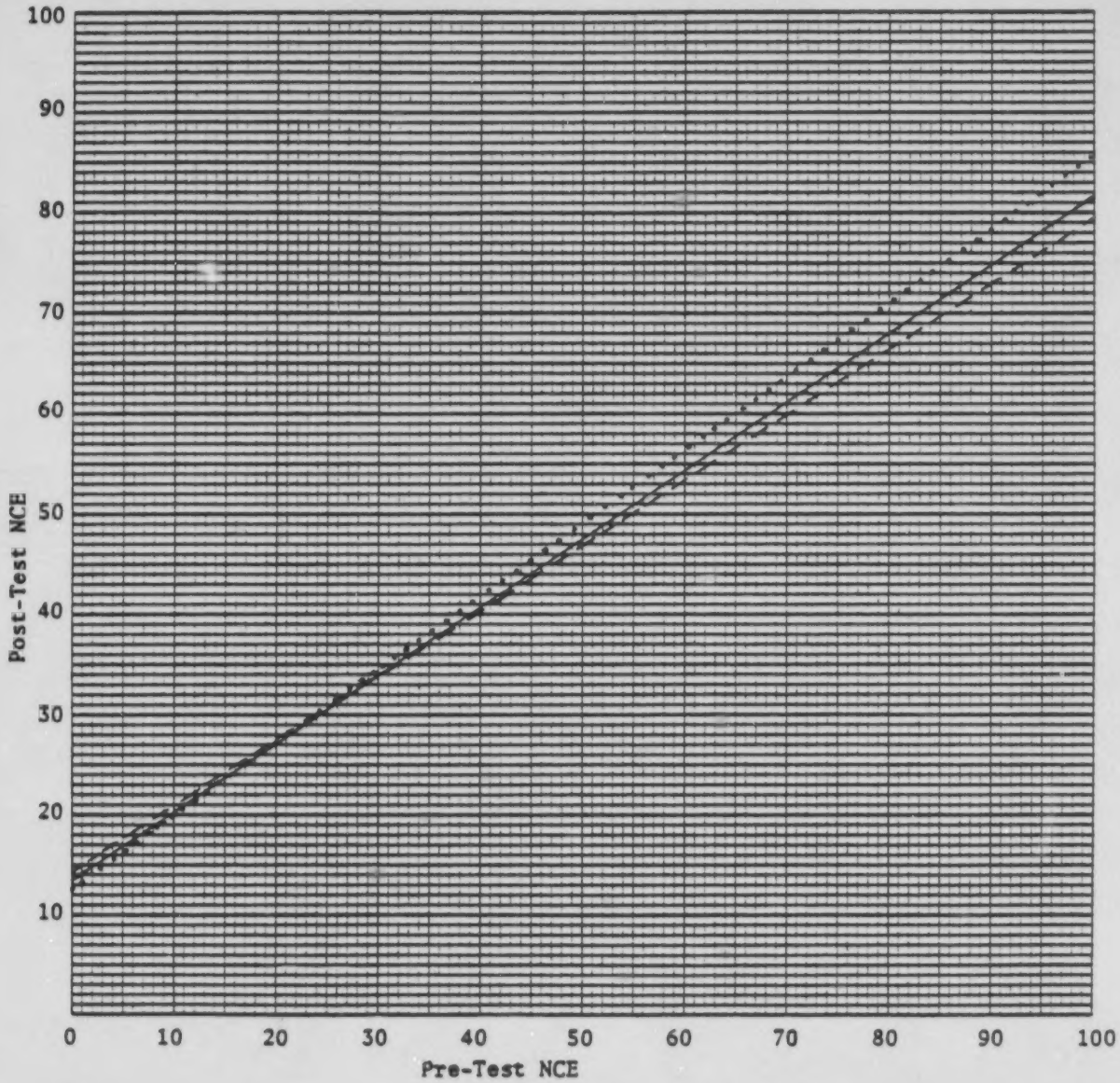
Student Group	N	r	S_e	Intercept	Slope
TOP TWO-THIRDS*	15,518	.597	12.35	6.08	.819
BOTTOM TWO-THIRDS**	11,348	.536	12.60	16.69	.595

* Statistics are based on those scoring above 33rd percentile (40.7 NCE) on pre-test, with regression line projected below 40.7 NCE pre-test point.

** Statistics are based on a random sample of those scoring below 67th percentile (59.3 NCE) on pre-test, with dashed regression line projected above the 59.3 NCE pre-test point.

FIGURE 10

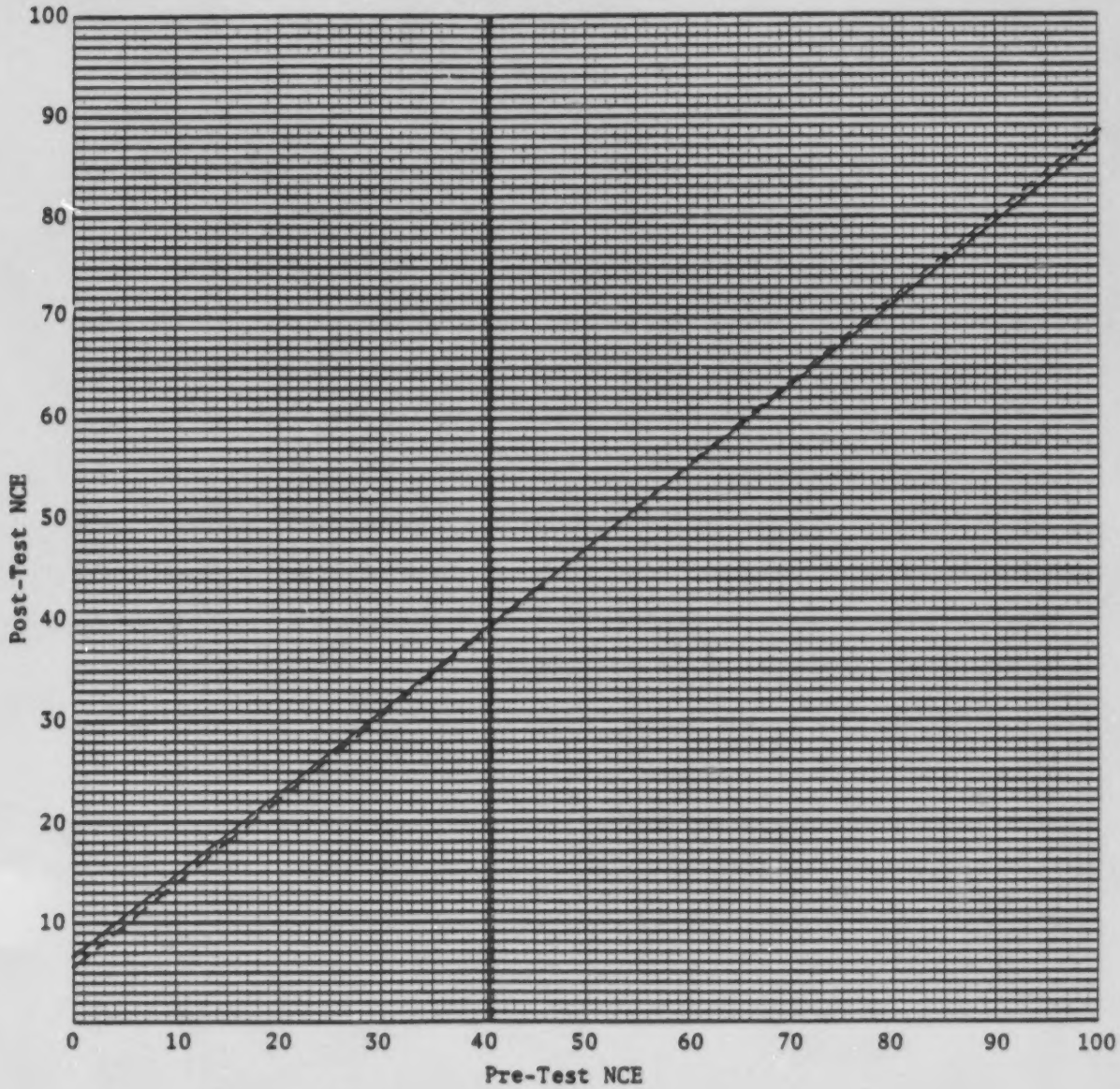
MINORITY, WHITE AND TOTAL STUDENT GROUP REGRESSION LINES FOR 1980-81 NON-THINK PROGRAM GRADES HAVING BOTH PRE AND POST TEST DATA (GRADES 4,5,10, AND 11)



Student Group		N	Pearson r	S_e	Y-Intercept	Slope
Total	(___)	9949	.662	13.25	13.64	.680
Minority	(---)	10742	.634	13.21	14.45	.649
White	(···)	3680	.707	13.24	12.62	.729

FIGURE 11

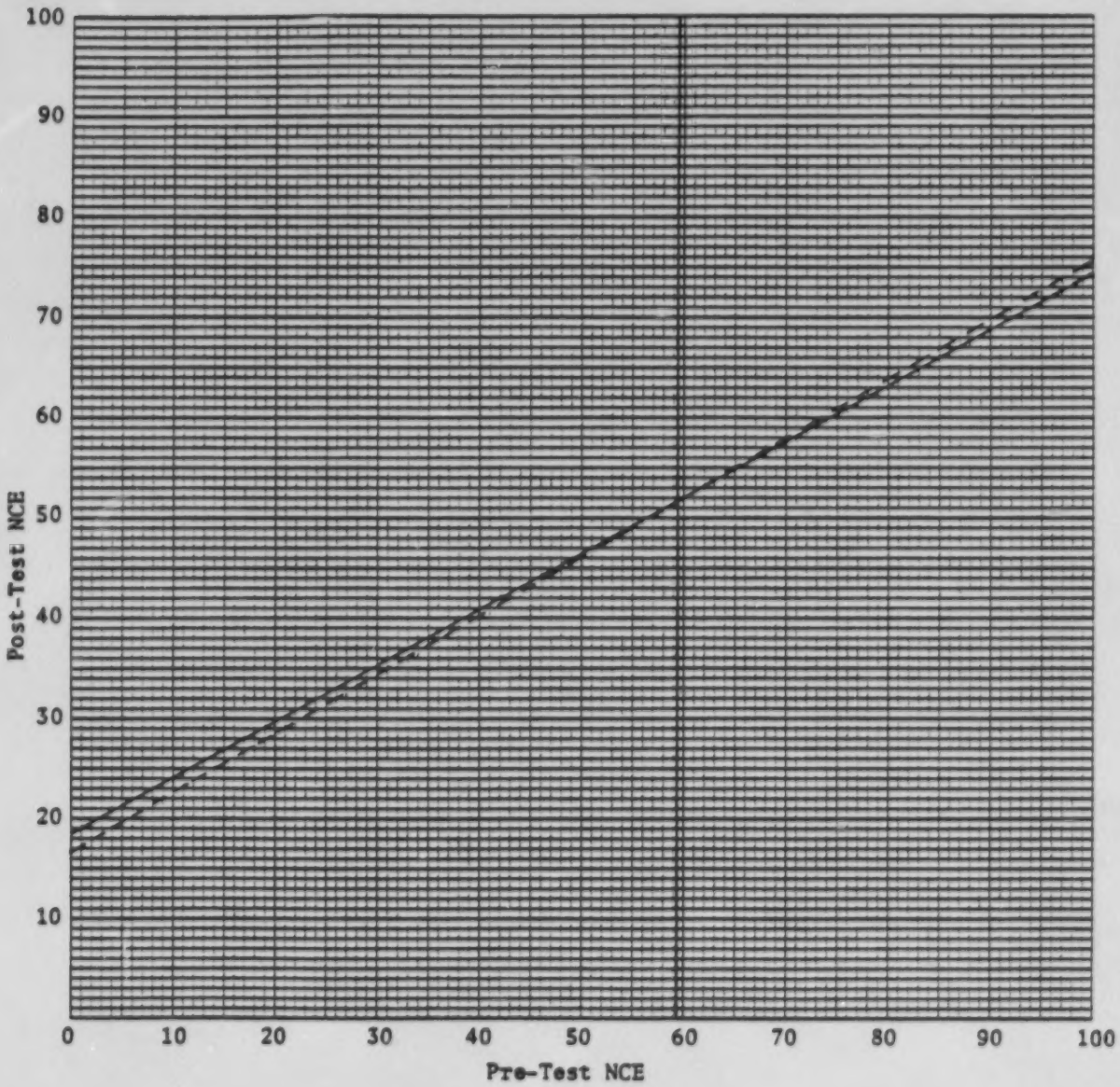
A COMPARISON OF THINK AND NON-THINK PROGRAM BASED REGRESSION LINES, FOR ALL GRADES HAVING BOTH PRE AND POST TEST DATA: FOR STUDENTS PRE-TESTING ABOVE 40.7 NCE (33RD PERCENTILE)



Student Group	N	Pearson r	S_e	Y-Intercept	Slope
THINK Grades (____) 6,7 & 9	7001	.615	11.63	6.79	.806
Non-THINK Grades (---) 4,5,10 & 11	8517	.584	12.92	5.49	.830

FIGURE 12

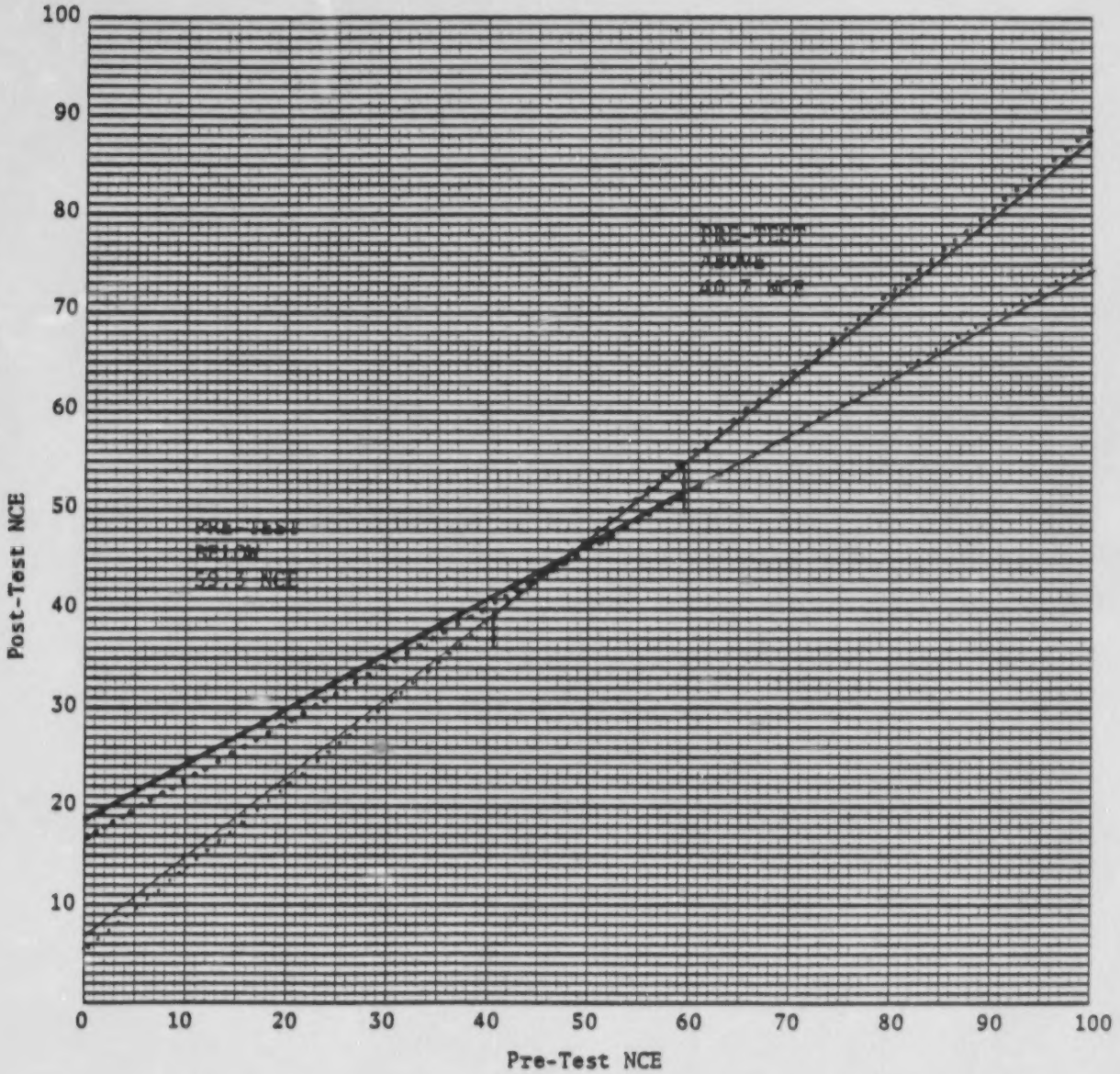
A COMPARISON OF THINK AND NON-THINK PROGRAM BASED REGRESSION LINES FOR ALL GRADES HAVING BOTH PRE AND POST TEST DATA: FOR STUDENTS PRE-TESTING BELOW 59.3 NCE (67TH PERCENTILE)



Student Group		N	Pearson r	S_e	Y-Intercept	Slope
THINK Grades 6,7 & 9	(——)	9662	.523	11.97	18.51	.557
Non-THINK Grades 4,5,10 & 11	(---)	9211	.521	13.07	16.85	.584

FIGURE 13

A COMPARISON OF STUDENTS PRE-TESTING ABOVE 40.7 NCE (33RD PERCENTILE) WITH THOSE BELOW 59.3 NCE (67TH PERCENTILE) FOR BOTH THINK AND NON-THINK GRADES USING REGRESSION LINES



Program Group	Pre-Test Group	N	Pearson r	S_e	Y-Intercept	Slope
THINK Grades: (____)	Above 40.7 NCE	7001	.615	11.63	6.79	.806
	Below 59.3 NCE	9662	.523	11.97	18.51	.557
Non-THINK Grades: (···)	Above 40.7 NCE	8517	.584	12.92	5.49	.830
	Below 59.3 NCE	9211	.521	13.07	16.85	.584

- APPENDICES -

- APPENDICES -

APPENDIX G

APPENDIX G

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* * * * * * * * * * * * * * * * * * * * CROSSTABULATION OF * * * * * * * * * * * * * * * * * * * *
   GAINGRP4  GAIN.ACE GAIN GRPS- 1=LESS 3=GE 99 2=MISD.    BY RIRACE    MINORITY=5   WHITE=6   MISSING DATA=-99
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * PAGE  1 OF  1

                    RIRACE
            COUNT   |
            ROW PCT |MINORITY WHITE---   ROW
            COL PCT |5-ALL B,H NONHISPA  TOTAL
            TOT PCT |     5  |     6  |
GAINGRP4    --------|--------|--------|
          1 |  7680  |  2591  | 10271
  GE 99   ACE GAIN  |  74.8  |  25.2  |  38.8
            |  38.7  |  39.0  |
            |  29.0  |   9.8  |
          -|--------|--------|
          2 |  4339  |  1466  |  5807
  NEG GAIN PRIMEN   |  74.7  |  25.3  |  21.9
            |  21.9  |  22.1  |
            |  16.4  |   5.5  |
          -|--------|--------|
          3 |  7837  |  2590  | 10427
  LE -4   ACE GAIN  |  75.2  |  24.8  |  39.3
            |  39.5  |  39.0  |
            |  29.6  |   9.8  |
          -|--------|--------|
  COLUMN    15856      6649     26505
  TOTAL      74.9       25.1     100.0

RAW CHI SQUARE =     0.50132 WITH     2 DEGREES OF FREEDOM.  SIGNIFICANCE =  0.7553
CRAMER'S V =  0.00400
CONTINGENCY COEFFICIENT =  0.00460
LAMBDA (ASYMMETRIC) =  0.00006 WITH GAINGRP4 DEPENDENT.          =  0.0     WITH RIRACE   DEPENDENT.
LAMBDA (SYMMETRIC) =  0.00004
UNCERTAINTY COEFFICIENT (ASYMMETRIC) =  0.00001 WITH GAINGRP4 DEPENDENT.          =  0.00002 WITH RIRACE   DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) =  0.00001
KENDALL'S TAU B =  0.00375.    SIGNIFICANCE =  0.2597
KENDALL'S TAU C =  0.00370.    SIGNIFICANCE =  0.2597
GAMMA =  0.00760
SOMERS'S D (ASYMMETRIC) =  0.00492 WITH GAINGRP4 DEPENDENT.          =  0.00291 WITH RIRACE   DEPENDENT.
SOMERS'S D (SYMMETRIC) =  0.00361
ETA =  0.00307 WITH GAINGRP4 DEPENDENT.          =  0.00439 WITH RIRACE   DEPENDENT.
PEARSON'S R =  0.00396  SIGNIFICANCE =  0.2554

NUMBER OF MISSING OBSERVATIONS =  66000
```

CROSSTABULATION OF GAINGRP4 CUMM.REL GAIN GRPS- 1=LE-4 3=GE+4 2=MID. BY IGRADE PAGE 1 OF 1

GAINGRP4		IGRADE 4	5	6	7	9	10	11	ROW TOTAL
	COUNT								
	ROW PCT								
	COL PCT								
	TOT PCT								
3		1593	2301	2221	691	1308	1217	959	10489
GE +4	REL GAIN	15.2	21.9	21.2	6.6	12.5	11.6	9.1	38.8
		30.7	43.5	46.2	22.0	46.3	45.6	43.2	
		5.9	8.5	8.2	3.3	4.8	4.5	3.5	
2		1021	1006	1091	946	689	627	548	5928
MID GAIN	WITHIN	17.2	17.0	18.4	16.0	11.6	10.6	9.2	21.9
		19.6	19.0	22.7	23.6	24.4	23.5	24.7	
		3.8	3.7	4.0	3.5	2.5	2.3	2.0	
1		2501	1989	1499	2339	830	822	713	10688
LE -4	REL GAIN	24.3	18.7	14.1	20.5	7.8	7.7	6.7	39.5
		49.6	37.5	31.2	58.4	29.4	30.8	32.1	
		9.6	7.3	5.5	8.1	3.1	3.0	2.6	
	COLUMN TOTAL	5199	5291	4811	4006	2827	2666	2220	27020
		19.2	19.6	17.8	14.8	10.5	9.9	8.2	100.0

RAW CHI SQUARE = 1226.94312 WITH 12 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0

CRAMER'S V = 0.15068

CONTINGENCY COEFFICIENT = 0.20041

LAMBDA (ASYMMETRIC) = 0.13149 WITH GAINGRP4 DEPENDENT. = 0.03139 WITH IGRADE DEPENDENT.

LAMBDA (SYMMETRIC) = 0.07946

UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02189 WITH GAINGRP4 DEPENDENT. = 0.01231 WITH IGRADE DEPENDENT.

UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01576

KENDALL'S TAU B = 0.06320. SIGNIFICANCE = 0.0000

KENDALL'S TAU C = 0.07004. SIGNIFICANCE = 0.0000

GAMMA = 0.08508

SOMERS'S D (ASYMMETRIC) = 0.05536 WITH GAINGRP4 DEPENDENT. = 0.03285 WITH IGRADE DEPENDENT.

SOMERS'S D (SYMMETRIC) = 0.06265

ETA = 0.20659 WITH GAINGRP4 DEPENDENT. = 0.09630 WITH IGRADE DEPENDENT.

PEARSON'S R = 0.08598 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 89485

```
* * * * * * * * * * * * * * * * * * * * CROSSTABULATION OF * * * * * * * * * * * * * * * * * * * *
                                          BY RACE    RACE=1-5  WHITE=6   MISSING DATA=-999
   GAINGRP                                                                  PAGE  3 OF  3
* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

                    RACE
            COUNT   |
            ROW PCT |MINORITY WHITE---   ROW
            COL PCT |-ALL R,N HUMNISPA  TOTAL
            TOT PCT |     5  |     6  |
GAINGRP     --------|--------|--------|
              3     |  5923  |  1936  |  7909
  D2NCE GE  2       |  74.9  |  25.1  |  29.8
                    |  29.8  |  29.9  |
                    |  22.3  |   7.3  |
                   -|--------|--------|
              2     |  7934  |  2668  | 10602
  D2NCE =2 TO <2    |  74.8  |  25.2  |  40.0
                    |  40.0  |  40.1  |
                    |  29.9  |  10.1  |
                   -|--------|--------|
              1     |  5999  |  1995  |  7994
  D2NCE LE =1       |  75.0  |  25.0  |  30.2
                    |  30.2  |  30.0  |
                    |  22.6  |   7.5  |
                   -|--------|--------|
            COLUMN    19856     6649    26505
            TOTAL      74.9      25.1    100.0

RAW CHI SQUARE =     0.10947 WITH     2 DEGREES OF FREEDOM.  SIGNIFICANCE = 0.9467
CRAMER'S V = 0.00203
CONTINGENCY COEFFICIENT = 0.00203
LAMBDA (ASYMMETRIC) =  0.0      WITH GAINGRP  DEPENDENT.          =  0.0     WITH RIRACE   DEPENDENT.
LAMBDA (SYMMETRIC) =  0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00000 WITH GAINGRP  DEPENDENT.          = 0.00000 WITH RIRACE   DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00000
KENDALL'S TAU B =  0.00131.    SIGNIFICANCE =  0.4107
KENDALL'S TAU C =  0.00130.    SIGNIFICANCE =  0.4107
GAMMA =  0.00263
SOMERS'S D (ASYMMETRIC) =  0.00123 WITH GAINGRP  DEPENDENT.          =  0.00049 WITH RIRACE   DEPENDENT.
SOMERS'S D (SYMMETRIC) =  0.00126
ETA =  0.00098 WITH GAINGRP  DEPENDENT.          =  0.00355 WITH RIRACE   DEPENDENT.
PEARSON'S R =  0.00139  SIGNIFICANCE =  0.4105

NUMBER OF MISSING OBSERVATIONS = 66000
```

CROSSTABULATION OF GAINGRP BY IGRADE

GAINGRP	IGRADE	4	5	6	7	8	10	11	ROW TOTAL
3	COUNT	1243	1854	1803	583	964	536	696	8079
DANCE GE 7	ROW PCT	15.4	22.9	22.3	7.2	11.9	11.6	8.6	29.9
	COL PCT	23.9	35.0	37.5	14.6	36.1	35.1	31.4	
	TOT PCT	4.6	6.9	6.7	2.2	3.6	3.5	2.6	
2	COUNT	1835	1929	1916	1723	1262	1144	1010	10819
DANCE -2 TO +2	ROW PCT	17.0	17.8	17.7	15.9	11.7	10.6	9.3	40.0
	COL PCT	35.3	36.5	39.8	43.0	46.8	42.9	45.5	
	TOT PCT	6.8	7.1	7.1	6.4	4.7	4.2	3.7	
1	COUNT	2121	1508	1092	1700	601	586	514	8122
DANCE LE -2	ROW PCT	26.1	18.6	13.4	20.9	7.4	7.2	6.3	30.1
	COL PCT	40.8	28.5	22.7	42.4	21.3	22.0	23.2	
	TOT PCT	7.8	5.6	4.0	6.3	2.2	2.2	1.9	
COLUMN TOTAL		5199	5291	4811	4008	2827	2666	2220	27020
		19.2	19.6	17.8	14.8	10.5	9.9	8.2	100.0

RAW CHI SQUARE = 1312.03247 WITH 12 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0
CRAMER'S V = 0.15582
CONTINGENCY COEFFICIENT = 0.21520
LAMBDA (ASYMMETRIC) = 0.01765 WITH GAINGRP DEPENDENT. = 0.02821 WITH IGRADE DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02370
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02315 WITH GAINGRP DEPENDENT. = 0.01329 WITH IGRADE DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01689
KENDALL'S TAU B = 0.05793. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.06493. SIGNIFICANCE = 0.0000
GAMMA = 0.07736
SOMERS'S D (ASYMMETRIC) = 0.05124 WITH GAINGRP DEPENDENT. = 0.05569 WITH IGRADE DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.05269
ETA = 0.20710 WITH GAINGRP DEPENDENT. = 0.10435 WITH IGRADE DEPENDENT.
PEARSON'S R = 0.07768 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 65485

APPENDIX H

APPENDIX H

ANALYSIS OF VARIANCE

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ	N
P2NCE	1		6417.0000	24.4924	14.2745	53181.4847	(262)
P2NCE	7		8354.0000	27.3007	13.0942	52294.3399	(306)
P2NCE	10		4982.0000	24.6634	12.8037	32951.1089	(202)
P2NCE	13		11468.0000	27.3048	13.0081	70898.9905	(420)
P2NCE	15		15761.0000	29.1870	13.5009	98246.1093	(540)
P2NCE	17		3358.0000	27.7521	11.5465	15998.5620	(121)
P2NCE	19		17517.0000	30.2017	13.4462	104683.3983	(580)
P2NCE	20		5981.0000	27.8186	12.0646	31149.9256	(215)
P2NCE	22		13472.0000	31.7736	13.5750	77550.2642	(424)
P2NCE	23		11183.0000	29.8213	12.8944	62183.0293	(375)
P2NCE	24		6708.0000	30.9124	11.9217	30659.3364	(217)
P2NCE	25		15348.0000	30.6960	12.9967	84287.7920	(500)
P2NCE	26		14796.0000	31.6831	12.5892	73855.0964	(467)
P2NCE	27		8289.0000	29.1866	12.9032	47117.1092	(284)
P2NCE	28		8927.0000	33.6868	12.4300	40789.0038	(265)
P2NCE	29		17336.0000	33.6621	13.1225	88511.2117	(515)
P2NCE	30		11518.0000	31.2141	12.3535	56160.0867	(369)
P2NCE	31		8303.0000	37.7409	11.1700	27324.2318	(220)
P2NCE	32		31021.0000	33.1067	12.9541	157069.3276	(937)
P2NCE	33		7872.0000	39.3600	12.8985	33108.0800	(200)
P2NCE	34		32932.0000	34.2328	13.0243	163017.8420	(962)
P2NCE	35		10948.0000	36.3721	12.0555	43600.3256	(301)
P2NCE	36		24410.0000	34.7721	12.4023	107825.5328	(702)
P2NCE	37		11040.0000	37.6792	14.2124	58981.8430	(293)
P2NCE	38		25981.0000	36.7482	12.4412	109277.1853	(707)
P2NCE	39		6148.0000	40.5867	10.6569	16921.9733	(150)
P2NCE	40		37573.0000	38.7750	13.1581	167594.9556	(969)
P2NCE	41		20255.0000	38.1450	11.6642	72107.8343	(531)
P2NCE	42		27605.0000	40.5912	11.9070	96975.5474	(680)
P2NCE	43		15258.0000	40.4721	13.7045	70617.5576	(377)
P2NCE	44		34654.0000	41.5018	12.2937	126046.7473	(835)
P2NCE	45		15216.0000	42.2667	10.6714	40882.4000	(360)
P2NCE	46		42156.0000	43.8668	11.4451	125750.9511	(961)
P2NCE	47		32380.0000	44.6006	11.7496	100888.1598	(726)
P2NCE	48		25894.0000	43.5926	13.0276	100643.4074	(594)
P2NCE	49		42725.0000	45.5903	12.0088	133628.9128	(929)
P2NCE	50		6618.0000	43.8278	10.8356	17611.5232	(151)
P2NCE	51		43835.0000	47.3380	11.8467	129819.2019	(926)
P2NCE	52		22442.0000	49.0000	11.6533	62060.0000	(458)
P2NCE	53		24810.0000	47.6200	12.6076	85300.7524	(521)
P2NCE	54		41039.0000	50.6030	11.6244	109452.1529	(811)
P2NCE	55		25124.0000	53.0042	11.4502	62013.9916	(474)
P2NCE	56		37071.0000	52.8830	11.7827	97102.4080	(701)
P2NCE	57		10693.0000	54.2792	13.6867	36715.6447	(197)
P2NCE	58		19273.0000	54.9088	11.1618	43605.0826	(351)
P2NCE	59		33318.0000	54.6197	12.0260	88075.7639	(610)
P2NCE	60		24607.0000	59.4372	12.0250	59719.6671	(414)
P2NCE	61		13678.0000	54.4940	11.7607	34571.7410	(251)
P2NCE	62		18977.0000	59.6761	12.9961	53557.6384	(318)
P2NCE	63		16440.0000	57.4825	12.9354	47687.4126	(286)
P2NCE	64		25108.0000	59.7810	13.2279	73315.8476	(420)

APPENDIX H (CONT'D)

ANALYSIS OF VARIANCE

VARIABLE	CODE	VALUE LABEL	SUM	MEAN	STD DEV	SUM OF SQ		N
P2NCE	66		26665.0000	62.3014	12.5355	67102.1192	(	428)
P2NCE	68		29326.0000	60.9688	13.2261	83966.5322	(	481)
P2NCE	69		4251.0000	68.5645	9.6642	5697.2419	(	62)
P2NCE	70		4731.0000	66.6338	12.2943	10580.4789	(	71)
P2NCE	71		17173.0000	63.6037	12.5524	42364.5963	(	270)
P2NCE	72		4136.0000	70.1017	12.5103	9077.3898	(	59)
P2NCE	73		5827.0000	72.9375	12.9551	13258.8875	(	80)
P2NCE	75		9246.0000	70.5802	12.3107	19701.9084	(	131)
P2NCE	76		15676.0000	65.5900	12.5165	37285.8159	(	239)
P2NCE	77		1567.0000	74.6190	7.6582	1172.9524	(	21)
P2NCE	78		5244.0000	73.8592	12.1424	10320.5915	(	71)
P2NCE	80		9908.0000	71.7971	14.7906	29970.3168	(	138)
P2NCE	81		5478.0000	66.0000	11.7026	11230.0000	(	83)
P2NCE	83		6908.0000	73.4894	13.0818	15915.4894	(	94)
P2NCE	85		5029.0000	68.8904	14.8899	15963.1233	(	73)
P2NCE	87		9613.0000	74.5194	13.7790	24302.2016	(	129)
P2NCE	93		8672.0000	80.2963	12.9977	18076.5185	(	108)
P2NCE	99		7310.0000	78.6022	18.3902	31114.2796	(	93)
	WITHIN GROUPS TOTAL		1173779.0000	43.4395	12.5136	4220436.5365	(	27023)

ANALYSIS OF VARIANCE

SOURCE	SUM OF SQUARES	D.F.	MEAN SQUARE	F	SIG.
BETWEEN GROUPS	3789277.843	68	55724.674	355.862	0.0
LINEARITY	3568742.617	1	**********	22790.234	0.0
DEV. FROM LINEARITY	220535.226	67	3291.571	21.020	0.0
	R = 0.6675	R SQUARED = 0.4456			
WITHIN GROUPS	4220436.536	26952	156.591		
	ETA = 0.6878	ETA SQUARED = 0.4731			

APPENDIX I

APPENDIX I

CROSSTABULATION OF FLAG BY RACE RACE OF STUDENT 1=I 2=W 3=B 4=O 5=H PAGE 1 OF 1

FLAG	RACE	1 AMER IND OR ESKI	2 WHITE NO T OF HIS	3 BLACK NO T OF HIS	4 ASIAN OR PAC ISL	5 HISPANIC	ROW TOTAL
0	COUNT	4	416	329	4	28	781
SPRING 1980 APR	ROW PCT	0.5	53.3	42.1	0.5	3.6	10.9
	COL PCT	14.3	17.1	7.5	10.8	11.2	
	TOT PCT	0.1	5.8	4.6	0.1	0.4	
1	COUNT	23	1903	4017	30	216	6189
SPRING 1981 APR	ROW PCT	0.4	30.7	64.9	0.5	3.5	86.4
	COL PCT	82.1	78.1	91.1	81.1	86.4	
	TOT PCT	0.3	26.6	56.1	0.4	3.0	
9	COUNT	1	117	65	3	6	192
SPRING 1979 APR	ROW PCT	0.5	60.9	33.9	1.6	3.1	2.7
	COL PCT	3.6	4.8	1.5	8.1	2.4	
	TOT PCT	0.0	1.6	0.9	0.0	0.1	
COLUMN TOTAL		28	2436	4411	37	250	7162
		0.4	34.0	61.6	0.5	3.5	100.0

RAW CHI SQUARE = 233.21251 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.12760
CONTINGENCY COEFFICIENT = 0.17758
LAMBDA (ASYMMETRIC) = 0.0 WITH FLAG DEPENDENT. = 0.05053 WITH RACE DEPENDENT.
LAMBDA (SYMMETRIC) = 0.03733
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03341 WITH FLAG DEPENDENT. = 0.01868 WITH RACE DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.02397
KENDALL'S TAU B = 0.07783. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.04065. SIGNIFICANCE = 0.0000
GAMMA = 0.19873
SOMERS'S D (ASYMMETRIC) = 0.05379 WITH FLAG DEPENDENT. = 0.11260 WITH RACE DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.07280
ETA = 0.06368 WITH FLAG DEPENDENT. = 0.12753 WITH RACE DEPENDENT.
PEARSON'S R = 0.05160 SIGNIFICANCE = 0.0002

APPENDIX I (CONT'D)

CROSSTABULATION OF FLAG BY BIRACE BLACK=5 AND NON-BLACK=6 AND MISSING=-999 PAGE 1 OF 1

FLAG	BIRACE BLACK (5)	BIRACE NON-BLACK (6)	ROW TOTAL
0	329	452	781
SPRING 1980 APR	42.1	57.9	10.9
	7.5	16.4	
	4.6	6.3	
1	4017	2172	6189
SPRING 1981 APR	64.9	35.1	86.4
	91.1	79.0	
	56.1	30.3	
9	65	127	192
SPRING 1979 APR	33.9	66.1	2.7
	1.5	4.6	
	0.9	1.8	
COLUMN TOTAL	4411	2751	7162
	61.6	38.4	100.0

RAW CHI SQUARE = 216.26994 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.17377
CONTINGENCY COEFFICIENT = 0.17121
LAMBDA (ASYMMETRIC) = 0.0 WITH FLAG DEPENDENT. = 0.06725 WITH BIRACE DEPENDENT.
LAMBDA (SYMMETRIC) = 0.04968
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03154 WITH FLAG DEPENDENT. = 0.02201 WITH BIRACE DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.02593
KENDALL'S TAU B = -0.08316. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.05612. SIGNIFICANCE = 0.0000
GAMMA = -0.22126
SOMERS'S D (ASYMMETRIC) = -0.05931 WITH FLAG DEPENDENT. = -0.11661 WITH BIRACE DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.07863
ETA = 0.05841 WITH FLAG DEPENDENT. = 0.17382 WITH BIRACE DEPENDENT.
PEARSON'S R = 0.05841 SIGNIFICANCE = 0.0000

APPENDIX I (CONT'D)

* CROSSTABULATION OF *
FLAG BY LUNCHCD
* * * * * * * * * * * * * * * * * * * \

APPENDIX I (CONT'D)

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *
FLAG BY P2STAY9 PRE I--CIBS COMPRE.STAY9
* * * * * * * * * * * * * * * * * * * \

APPENDIX I (CONT'D)

* CROSSTABULATION OF *
FLAG BY PISTAY9 PRE I--CIBS VOCAB. STAY9
* * * * * * * * * * * * * * * * * * * \

APPENDIX I (CONT'D)

* C R O S S T A B U L A T I O N O F *
FLAG BY T2STAY9 POST T--CTBS COMPRE.STAY9
* PAGE 1 OF 1

	T2STAY9									
	COUNT / ROW PCT / COL PCT / TOT PCT	BOTTOM 4 PERCENT	5-11 CEN TILE 7 P	12-23 CE NTILE 12	24-40 CE NTILE 17	41-60 CE NTILE 20	61-77 CE NTILE 17	78-89 CE NTILE 12	90-96 CE NTILE 7	97-100 C ENTILE 4	ROW TOTAL
FLAG	1	2	3	4	5	6	7	8	9	
0	2	6	14	31	51	45	51	19	42	261
SPRING 1980 APR	0.8	2.3	5.4	11.9	19.5	17.2	19.5	7.3	16.1	4.4
	5.1	2.3	2.9	3.8	3.1	3.4	6.5	6.2	13.7	
	0.0	0.1	0.2	0.5	0.9	0.8	0.9	0.3	0.7	
1	37	257	462	790	1616	1273	732	289	264	5720
SPRING 1981 APR	0.6	4.5	8.1	13.8	28.3	22.3	12.8	5.1	4.6	95.6
	94.9	97.7	97.1	96.2	96.9	96.6	93.5	93.8	86.3	
	0.6	4.3	7.7	13.2	27.0	21.3	12.2	4.8	4.4	
COLUMN TOTAL	39	263	476	821	1667	1318	783	308	306	5981
	0.7	4.4	8.0	13.7	27.9	22.0	13.1	5.1	5.1	100.0

RAW CHI SQUARE = 90.75336 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.12318
CONTINGENCY COEFFICIENT = 0.12226
LAMBDA (ASYMMETRIC) = 0.0 WITH FLAG DEPENDENT. = 0.0 WITH T2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03210 WITH FLAG DEPENDENT. = 0.00302 WITH T2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00552
KENDALL'S TAU B = -0.07207. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.03781. SIGNIFICANCE = 0.0000
GAMMA = -0.26691
SOMERS'S D (ASYMMETRIC) = -0.02294 WITH FLAG DEPENDENT. = -0.22647 WITH T2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.04165
ETA = 0.12322 WITH FLAG DEPENDENT. = 0.09047 WITH T2STAY9 DEPENDENT.
PEARSON'S R =-0.09047 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 1181

APPENDIX I (CONT'D)

* CROSSTABULATION OF *
FLAG BY TISTAY9 POST I--CIBS VOCAB. STAY9
* PAGE 1 OF 1

	TISTAY9									
COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
FLAG										
0	1	5	22	17	47	67	62	20	20	261
SPRING 1980 APR	0.4	1.9	8.4	6.5	18.0	25.7	23.8	7.7	7.7	4.4
	2.6	2.7	4.1	1.6	3.1	5.2	7.4	6.1	10.7	
	0.0	0.1	0.4	0.3	0.8	1.1	1.0	0.3	0.3	
1	38	183	518	1041	1465	1225	776	306	167	5719
SPRING 1981 APR	0.7	3.2	9.1	18.2	25.6	21.4	13.6	5.4	2.9	95.6
	97.4	97.3	95.9	98.4	96.9	94.8	92.6	93.9	89.3	
	0.6	3.1	8.7	17.4	24.5	20.5	13.0	5.1	2.8	
COLUMN TOTAL	39	188	540	1058	1512	1292	838	326	187	5980
	0.7	3.1	9.0	17.7	25.3	21.6	14.0	5.5	3.1	100.0

RAW CHI SQUARE = 67.68420 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.10639
CONTINGENCY COEFFICIENT = 0.10579
LAMBDA (ASYMMETRIC) = 0.0 WITH FLAG DEPENDENT. = 0.00448 WITH TISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00423
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03080 WITH FLAG DEPENDENT. = 0.00293 WITH TISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00535
KENDALL'S TAU B = -0.07872. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.04133. SIGNIFICANCE = 0.0000
GAMMA = -0.29481
SOMERS'S D (ASYMMETRIC) = -0.02504 WITH FLAG DEPENDENT. = -0.24752 WITH TISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.04547
ETA = 0.10639 WITH FLAG DEPENDENT. = 0.08679 WITH TISTAY9 DEPENDENT.
PEARSON'S R = -0.08675 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 1182

APPENDIX I (CONT'D)

APPENDIX I (CONT'D)

CROSSTABULATION OF FLAG BY SEX SEX OF STUDENT--AS CURRENTLY LISTED PAGE 1 OF 1

COUNT / ROW PCT / COL PCT / TOT PCT	SEX: MALE (1)	FEMALE (2)	ROW TOTAL
FLAG: 0 (SPRING 1980 APR)	396	385	781
	50.7	49.3	10.9
	10.7	11.1	
	5.5	5.4	
1 (SPRING 1981 APR)	3191	2998	6189
	51.6	48.4	86.4
	86.6	86.2	
	44.6	41.9	
9 (SPRING 1979 APR)	97	95	192
	50.5	49.5	2.7
	2.6	2.7	
	1.4	1.3	
COLUMN TOTAL	3684	3478	7162
	51.4	48.6	100.0

RAW CHI SQUARE = 0.26939 WITH 2 DEGREES OF FREEDOM. SIGNIFICANCE = 0.8740
CRAMER'S V = 0.00613
CONTINGENCY COEFFICIENT = 0.00613
LAMBDA (ASYMMETRIC) = 0.0 WITH FLAG DEPENDENT. = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00004 WITH FLAG DEPENDENT. = 0.00003 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00003
KENDALL'S TAU B = -0.00323. SIGNIFICANCE = 0.3912
KENDALL'S TAU C = -0.00224. SIGNIFICANCE = 0.3912
GAMMA = -0.00931
SOMERS'S D (ASYMMETRIC) = -0.00229 WITH FLAG DEPENDENT. = -0.00465 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.00302
ETA = 0.00179 WITH FLAG DEPENDENT. = 0.00597 WITH SEX DEPENDENT.
PEARSON'S R = 0.00173 SIGNIFICANCE = 0.4417

APPENDIX J

APPENDIX J

STUDENT GROUP: STUDENTS FROM ALL FAMILY INCOME LEVELS

* CROSSTABULATION OF *
BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY LUNCHCD LUNCHCODE SES--6=FREE 7=REDUCED & 8=PAID
* * * * * * * * * * * * * * * * * * * \

APPENDIX J (CONT'D)

STUDENT GROUP: STUDENTS FROM ALL FAMILY INCOME LEVELS

* C R O S S T A B U L A T I O N O F *
CGRADE GRADE--CURRENT YEAR BY PISTAY9 PRE 1--CTES VOCAB. STAY9
* PAGE 1 OF 1

	PISTAY9									
	COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
CGRADE											
0		4	13	51	65	183	218	256	115	69	974
OUTMIGRATED STUD		0.4	1.3	5.2	6.7	18.8	22.4	26.3	11.8	7.1	14.9
		14.8	6.7	11.5	9.7	12.3	14.1	18.4	21.4	28.5	
		0.1	0.2	0.8	1.0	2.8	3.3	3.9	1.8	1.1	
1		23	181	391	603	1304	1329	1138	422	173	5564
RETAINED THRU 80		0.4	3.3	7.0	10.8	23.4	23.9	20.5	7.6	3.1	85.1
		85.2	93.3	88.5	90.3	87.7	85.9	81.6	78.6	71.5	
		0.4	2.8	6.0	9.2	19.9	20.3	17.4	6.5	2.6	
COLUMN TOTAL		27	194	442	668	1487	1547	1394	537	242	6538
		0.4	3.0	6.8	10.2	22.7	23.7	21.3	8.2	3.7	100.0

1 OUT OF 18 (5.6%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 4.022
RAW CHI SQUARE = 103.53735 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.12584
CONTINGENCY COEFFICIENT = 0.12486
LAMBDA (ASYMMETRIC) = 0.0 WITH CGRADE DEPENDENT. = 0.00761 WITH PISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00637
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01807 WITH CGRADE DEPENDENT. = 0.00405 WITH PISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00662
KENDALL'S TAU B = -0.10231. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.09346. SIGNIFICANCE = 0.0000
GAMMA = -0.22306
SOMERS'S D (ASYMMETRIC) = -0.05680 WITH CGRADE DEPENDENT. = -0.18430 WITH PISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.08683
ETA = 0.12584 WITH CGRADE DEPENDENT. = 0.11501 WITH PISTAY9 DEPENDENT.
PEARSON'S R = -0.11500 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 6

APPENDIX J (CONT'D)

STUDENT GROUP: STUDENTS FROM ALL FAMILY INCOME LEVELS

CROSSTABULATION OF CGRADE GRADE--CURRENT YEAR BY P2STAY9 PRE T--<1&S COMPRE.STAY9 PAGE 1 OF 1

CGRADE	P2STAY9									
	COUNT / ROW PCT / COL PCT / TOT PCT	BUTTOM 4 PERCENT 1	5-11 CEN TILE 7 P 2	12-23 CE NTILE 12 3	24-40 CE NTILE 17 4	41-60 CE NTILE 20 5	61-77 CE NTILE 17 6	78-89 CE NTILE 12 7	90-96 CE NTILE 7 8	97-100 C ENTILE 4 9	ROW TOTAL
0		10	43	104	139	182	259	144	55	39	975
OUTMIGRATED STUD		1.0	4.4	10.7	14.3	18.7	26.6	14.8	5.6	4.0	14.9
		14.7	9.5	11.3	13.1	11.9	17.1	21.3	25.8	33.6	
		0.2	0.7	1.6	2.1	2.8	4.0	2.2	0.8	0.6	
1		58	410	814	922	1343	1252	531	158	77	5565
RETAINED THRU 80		1.0	7.4	14.6	16.6	24.1	22.5	9.5	2.8	1.4	85.1
		85.3	90.5	88.7	86.9	88.1	82.9	78.7	74.2	66.4	
		0.9	6.3	12.4	14.1	20.5	19.1	8.1	2.4	1.2	
COLUMN TOTAL		68	453	918	1061	1525	1511	675	213	116	6540
		1.0	6.9	14.0	16.2	23.3	23.1	10.3	3.3	1.8	100.0

RAW CHI SQUARE = 113.03102 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.13146
CONTINGENCY COEFFICIENT = 0.13034
LAMBDA (ASYMMETRIC) = 0.0 WITH CGRADE DEPENDENT. = 0.01535 WITH P2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01285
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01882 WITH CGRADE DEPENDENT. = 0.00417 WITH P2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00683
KENDALL'S TAU B = -0.09754. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.08948. SIGNIFICANCE = 0.0000
GAMMA = -0.21084
SOMERS'S D (ASYMMETRIC) = -0.05395 WITH CGRADE DEPENDENT. = -0.17634 WITH P2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.08262
ETA = 0.13148 WITH CGRADE DEPENDENT. = 0.11338 WITH P2STAY9 DEPENDENT.
PEARSON'S R =-0.11337 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 4

APPENDIX J (CONT'D)

STUDENT GROUP: STUDENTS FROM ALL FAMILY INCOME LEVELS

CROSSTABULATION OF CGRADE GRADE--CURRENT YEAR BY TISTAY9 POST 1--CTBS VOCAB. STAY9 PAGE 1 OF 1

CGRADE	TISTAY9 COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
0		1	5	18	16	46	60	56	20	19	241
OUTMIGRATED STUD		0.4	2.1	7.5	6.6	19.1	24.9	23.2	8.3	7.9	4.5
		3.3	3.5	4.0	1.7	3.4	5.1	7.3	6.6	10.7	
		0.0	0.1	0.3	0.3	0.9	1.1	1.0	0.4	0.4	
1		29	136	430	923	1316	1124	708	281	158	5105
RETAINED THRU 80		0.6	2.7	8.4	18.1	25.8	22.0	13.9	5.5	3.1	95.5
		96.7	96.5	96.0	98.3	96.6	94.9	92.7	93.4	89.3	
		0.5	2.5	8.0	17.3	24.6	21.0	13.2	5.3	3.0	
COLUMN TOTAL		30	141	448	939	1362	1184	764	301	177	5346
		0.6	2.6	8.4	17.6	25.5	22.1	14.3	5.6	3.3	100.0

1 OUT OF 18 (5.6%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.352
RAW CHI SQUARE = 55.96968 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.10232
CONTINGENCY COEFFICIENT = 0.10179
LAMBDA (ASYMMETRIC) = 0.0 WITH CGRADE DEPENDENT. = 0.00351 WITH TISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00331
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02782 WITH CGRADE DEPENDENT. = 0.00273 WITH TISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00497
KENDALL'S TAU B = -0.07680. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.04088. SIGNIFICANCE = 0.0000
GAMMA = -0.28335
SOMERS'S D (ASYMMETRIC) = -0.02484 WITH CGRADE DEPENDENT. = -0.23741 WITH TISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.04498
ETA = 0.10233 WITH CGRADE DEPENDENT. = 0.08452 WITH TISTAY9 DEPENDENT.
PEARSON'S R = -0.08455 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 1198

APPENDIX J (CONT'D)

STUDENT GROUP: STUDENTS FROM ALL FAMILY INCOME LEVELS

CROSSTABULATION OF CGRADE GRADE--CURRENT YEAR BY T2STAY9 POST 1--CTBS COMPRE.STAY9 PAGE 1 OF 1

	T2STAY9									
COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	5-11 CEN TILE 7 P	12-23 CE NTILE 12	24-40 CE NTILE 17	41-60 CE NTILE 20	61-77 CE NTILE 17	78-89 CE NTILE 12	90-96 CE NTILE 7	97-100 C ENTILE 4	ROW TOTAL
	1	2	3	4	5	6	7	8	9	
CGRADE										
0	0	5	13	27	45	44	49	17	41	241
OUTMIGRATED STUD	0.0	2.1	5.4	11.2	18.7	18.3	20.3	7.1	17.0	4.5
	0.0	2.4	3.2	3.8	3.0	3.6	6.9	5.9	14.4	
	0.0	0.1	0.2	0.5	0.8	0.8	0.9	0.3	0.8	
1	29	202	392	677	1456	1171	663	273	243	5106
RETAINED THRU 80	0.6	4.0	7.7	13.3	28.5	22.9	13.0	5.3	4.8	95.5
	100.0	97.6	96.8	96.2	97.0	96.4	93.1	94.1	85.6	
	0.5	3.8	7.3	12.7	27.2	21.9	12.4	5.1	4.5	
COLUMN TOTAL	29	207	405	704	1501	1215	712	290	284	5347
	0.5	3.9	7.6	13.2	28.1	22.7	13.3	5.4	5.3	100.0

1 OUT OF 18 (5.6%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 1.307
RAW CHI SQUARE = 91.57607 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.13087
CONTINGENCY COEFFICIENT = 0.12976
LAMBDA (ASYMMETRIC) = 0.0 WITH CGRADE DEPENDENT. = 0.00104 WITH T2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.00098
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03582 WITH CGRADE DEPENDENT. = 0.00348 WITH T2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00634
KENDALL'S TAU B = -0.07816. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = -0.04157. SIGNIFICANCE = 0.0000
GAMMA = -0.28513
SOMERS'S D (ASYMMETRIC) = -0.02530 WITH CGRADE DEPENDENT. = -0.24145 WITH T2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.04580
ETA = 0.13090 WITH CGRADE DEPENDENT. = 0.09814 WITH T2STAY9 DEPENDENT.
PEARSON'S R =-0.09814 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 1197

100

100A

APPENDIX J (CONT'D)

STUDENT GROUP: LOWEST FAMILY INCOME (RECEIVE FREE LUNCH)

CROSSTABULATION OF BIRACE MINORITY-5 WHITE-6 MISSING DATA=-999 BY PISTAY9 PRE 1--CTBS VOCAB. STAY9 PAGE 1 OF 1

BIRACE	PISTAY9	1 BOTTOM 4 PERCENT	5-11 CEN TILE 7 P	12-23 CE NTILE 12	24-40 CE NTILE 17	41-60 CE NTILE 20	61-77 CE NTILE 17	78-89 CE NTILE 12	90-96 CE NTILE 7	97-100 C ENTILE 4	ROW TOTAL
	COUNT	1	2	3	4	5	6	7	8	9	
5	ROW PCT	14	121	274	427	865	744	495	148	44	3132
MINORITY-ALL B,H	COL PCT	0.4	3.9	8.7	13.6	27.6	23.8	15.8	4.7	1.4	77.3
	TOT PCT	73.7	80.7	82.8	83.6	82.7	75.5	70.2	64.6	60.3	
		0.3	3.0	6.8	10.5	21.4	18.4	12.2	3.7	1.1	
6	ROW PCT	5	29	57	84	181	242	210	81	29	918
WHITE---NONHISPA	COL PCT	0.5	3.2	6.2	9.2	19.7	26.4	22.9	8.8	3.2	22.7
	TOT PCT	26.3	19.3	17.2	16.4	17.3	24.5	29.8	35.4	39.7	
		0.1	0.7	1.4	2.1	4.5	6.0	5.2	2.0	0.7	
COLUMN TOTAL		19	150	331	511	1046	986	705	229	73	4050
		0.5	3.7	8.2	12.6	25.8	24.3	17.4	5.7	1.8	100.0

1 OUT OF 18 (5.6%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 4.307
RAW CHI SQUARE = 90.74492 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000

CRAMER'S V = 0.14969
CONTINGENCY COEFFICIENT = 0.14804
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.02031 WITH PISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01555
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02034 WITH BIRACE DEPENDENT. = 0.00590 WITH PISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00915
KENDALL'S TAU B = 0.12009. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.12848. SIGNIFICANCE = 0.0000
GAMMA = 0.22264
SOMERS'S D (ASYMMETRIC) = 0.07870 WITH BIRACE DEPENDENT. = 0.18323 WITH PISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.11011
ETA = 0.14967 WITH BIRACE DEPENDENT. = 0.12723 WITH PISTAY9 DEPENDENT.
PEARSON'S R = 0.12723 SIGNIFICANCE = 0.0000

101

10/4

APPENDIX J (CONT'D)

STUDENT GROUP: LOWEST FAMILY INCOME (RECEIVE FREE LUNCH)

* C R O S S T A B U L A T I O N O F *
BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY P2STAY9 PRE 1--CTBS COMPRE.STAY9
* PAGE 1 OF 1

	P2STAY9									
COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT TILE 7	5-11 CEN TILE 12	12-23 CE NTILE 17	24-40 CE NTILE 20	41-60 CE NTILE 17	61-77 CE NTILE 12	78-89 CE NTILE 7	90-96 CE NTILE 4	97-100 C ENTILE 1	ROW TOTAL
BIRACE	1	2	3	4	5	6	7	8	9	
5	44	276	542	576	787	603	236	48	20	3132
MINORITY-ALL B,H	1.4	8.8	17.3	18.4	25.1	19.3	7.5	1.5	0.6	77.3
	84.6	80.9	80.2	80.0	78.6	73.8	71.3	64.9	52.6	
	1.1	6.8	13.4	14.2	19.4	14.9	5.8	1.2	0.5	
6	8	65	134	144	214	214	95	26	18	918
WHITE---NONHISPA	0.9	7.1	14.6	15.7	23.3	23.3	10.3	2.8	2.0	22.7
	15.4	19.1	19.8	20.0	21.4	26.2	26.7	35.1	47.4	
	0.2	1.6	3.3	3.6	5.3	5.3	2.3	0.6	0.4	
COLUMN TOTAL	52	341	676	720	1001	817	331	74	38	4050
	1.3	8.4	16.7	17.8	24.7	20.2	8.2	1.8	0.9	100.0

RAW CHI SQUARE = 43.55292 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.10370
CONTINGENCY COEFFICIENT = 0.10315
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.0 WITH P2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00940 WITH BIRACE DEPENDENT. = 0.00270 WITH P2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00420
KENDALL'S TAU B = 0.07629. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.06203. SIGNIFICANCE = 0.0000
GAMMA = 0.14134
SOMERS'S D (ASYMMETRIC) = 0.04975 WITH BIRACE DEPENDENT. = 0.11699 WITH P2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.06981
ETA = 0.10359 WITH BIRACE DEPENDENT. = 0.09046 WITH P2STAY9 DEPENDENT.
PEARSON'S R = 0.09046 SIGNIFICANCE = 0.0000

APPENDIX J (CONT'D)

STUDENT GROUP: LOWEST FAMILY INCOME (RECEIVE FREE LUNCH)

* CROSSTABULATION OF *
BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY TISTAY9 POST 1--CTBS VOCAB. STAY9
* PAGE 1 OF 1

	TISTAY9									
	COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
BIRACE											
5		22	95	306	626	792	568	253	92	64	2858
MINORITY-ALL B,H		0.8	3.3	10.7	21.9	27.7	19.9	10.3	3.2	2.2	77.6
		81.5	86.4	82.7	80.9	79.5	76.2	63.9	66.2	67.4	
		0.6	2.6	8.3	17.0	21.5	15.4	6.8	2.5	1.7	
6		5	15	64	148	204	177	152	47	31	823
WHITE---NONHISPA		0.6	1.8	7.8	18.0	24.8	21.5	18.6	5.7	3.8	22.4
		18.5	13.6	17.3	19.1	20.5	23.8	31.1	33.8	32.6	
		0.1	0.4	1.7	4.0	5.5	4.8	3.6	1.3	0.8	
COLUMN TOTAL		27	110	370	774	996	745	425	139	95	3681
		0.7	3.0	10.1	21.0	27.1	20.2	11.5	3.8	2.6	100.0

RAW CHI SQUARE = 52.85713 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.11983
CONTINGENCY COEFFICIENT = 0.11898
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.0 WITH TISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01306 WITH BIRACE DEPENDENT. = 0.00376 WITH TISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00584
KENDALL'S TAU B = 0.09779. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.10405. SIGNIFICANCE = 0.0000
GAMMA = 0.18250
SOMERS'S D (ASYMMETRIC) = 0.06382 WITH BIRACE DEPENDENT. = 0.14965 WITH TISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.08952
ETA = 0.11980 WITH BIRACE DEPENDENT. = 0.11219 WITH TISTAY9 DEPENDENT.
PEARSON'S R = 0.11221 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 369

APPENDIX J (CONT'D)

STUDENT GROUP: LOWEST FAMILY INCOME (RECEIVE FREE LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY T2STAY9 POSI T--CIBS COMPRE.STAY9

PAGE 1 OF 1

	T2STAY9									
COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
BIRACE										
5	23	135	248	464	894	632	292	95	75	2858
MINORITY-ALL B,H	0.8	4.7	8.7	16.2	31.3	22.1	10.2	3.3	2.6	77.6
	88.5	78.5	77.5	84.4	79.0	79.3	70.7	62.1	63.6	
	0.6	3.7	6.7	12.6	24.3	17.2	7.9	2.6	2.0	
6	3	37	72	86	238	165	121	58	43	823
WHITE---NONHISPA	0.4	4.5	8.7	10.4	28.9	20.0	14.7	7.0	5.2	22.4
	11.5	21.5	22.5	15.6	21.0	20.7	29.3	37.9	36.4	
	0.1	1.0	2.0	2.3	6.5	4.5	3.3	1.6	1.2	
COLUMN TOTAL	26 0.7	172 4.7	320 8.7	550 14.9	1132 30.8	797 21.7	413 11.2	153 4.2	118 3.2	3681 100.0

RAW CHI SQUARE = 64.81242 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0000
CRAMER'S V = 0.13269
CONTINGENCY COEFFICIENT = 0.13154
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.0 WITH T2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01576 WITH BIRACE DEPENDENT. = 0.00451 WITH T2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00701
KENDALL'S TAU B = 0.08159. SIGNIFICANCE = 0.0000
KENDALL'S TAU C = 0.08659. SIGNIFICANCE = 0.0000
GAMMA = 0.15212
SOMERS'S D (ASYMMETRIC) = 0.05338 WITH BIRACE DEPENDENT. = 0.12470 WITH T2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.07476
ETA = 0.13263 WITH BIRACE DEPENDENT. = 0.09557 WITH T2STAY9 DEPENDENT.
PEARSON'S R = 0.09557 SIGNIFICANCE = 0.0000

NUMBER OF MISSING OBSERVATIONS = 369

164

104A

APPENDIX J (CONT'D)

STUDENT GROUP: LOWEST FAMILY INCOME (RECEIVE FREE LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=999 BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F

	SEX		
COUNT / ROW PCT / COL PCT / TOT PCT	MALE 1	FEMALE 2	ROW TOTAL
BIRACE 5	1595	1537	3132
MINORITY-ALL B,H	50.9	49.1	77.3
	77.1	77.6	
	39.4	38.0	
6	475	443	918
WHITE---NONHISPA	51.7	48.3	22.7
	22.9	22.4	
	11.7	10.9	
COLUMN TOTAL	2070	1980	4050
	51.1	48.9	100.0

CORRECTED CHI SQUARE = 0.15835 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.6907
RAW CHI SQUARE = 0.18963 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.6632
PHI = 0.00684
CONTINGENCY COEFFICIENT = 0.00684
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.0 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.0
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00004 WITH BIRACE DEPENDENT. = 0.00003 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00004
KENDALL'S TAU B = -0.00684. SIGNIFICANCE = 0.3316
KENDALL'S TAU C = -0.00573. SIGNIFICANCE = 0.3316
GAMMA = -0.01635
SOMERS'S D (ASYMMETRIC) = -0.00573 WITH BIRACE DEPENDENT. = -0.00817 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.00674
ETA = 0.00813 WITH BIRACE DEPENDENT. = 0.00691 WITH SEX DEPENDENT.
PEARSON'S R = -0.00684 SIGNIFICANCE = 0.3317

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

CROSSTABULATION OF CGRADE GRADE--CURRENT YEAR BY BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999

PAGE 1 OF 1

		BIRACE		
	COUNT			
	ROW PCT	MINORITY	WHITE---	ROW
	COL PCT	-ALL B,H	NONHISPA	TOTAL
	TOT PCT	5	6	
CGRADE				
1		283	200	483
RETAINED THRU 80		58.6	41.4	100.0
		100.0	100.0	
		58.6	41.4	
COLUMN TOTAL		283	200	483
		58.6	41.4	100.0

STATISTICS CANNOT BE COMPUTED WHEN THE NUMBER OF NON-EMPTY ROWS OR COLUMNS IS ONE.

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY PISTAY9 PRE 1--CTBS VOCAB. STAY9

BIRACE	PISTAY9 COUNT / ROW PCT / COL PCT / TOT PCT	BUTTOM 4 PERCENT	5-11 PCTILE 8	CEN 12-23 PCTILE 12	CE 24-40 PCTILE 17	CE 41-60 PCTILE 20	CE 61-77 PCTILE 17	CE 78-89 PCTILE 12	CE 90-96 PCTILE 7	CE 97-100 PCTILE 4	ROW TOTAL
MINORITY-ALL B,H	5	1	2	10	19	69	61	86	30	5	283
		0.4	0.7	3.5	6.7	24.4	21.6	30.4	10.6	1.8	58.6
		100.0	33.3	52.6	65.5	71.9	57.0	58.5	55.6	20.8	
		0.2	0.4	2.1	3.9	14.3	12.6	17.8	6.2	1.0	
WHITE---NONHISPA	6	0	4	9	10	27	46	61	24	19	200
		0.0	2.0	4.5	5.0	13.5	23.0	30.5	12.0	9.5	41.4
		0.0	66.7	47.4	34.5	28.1	43.0	41.5	44.4	79.2	
		0.0	0.8	1.9	2.1	5.6	9.5	12.6	5.0	3.9	
COLUMN TOTAL		1	6	19	29	96	107	147	54	24	483
		0.2	1.2	3.9	6.0	19.9	22.2	30.4	11.2	5.0	100.0

4 OUT OF 18 (22.2%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.414
RAW CHI SQUARE = 24.53682 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0019
CRAMER'S V = 0.22539
CONTINGENCY COEFFICIENT = 0.21987
LAMBDA (ASYMMETRIC) = 0.08000 WITH BIRACE DEPENDENT. = 0.0 WITH PISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02985
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.03875 WITH BIRACE DEPENDENT. = 0.01481 WITH PISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.02143
KENDALL'S TAU B = 0.11007. SIGNIFICANCE = 0.0033
KENDALL'S TAU C = 0.13703. SIGNIFICANCE = 0.0033
GAMMA = 0.17533
SOMERS'S D (ASYMMETRIC) = 0.08580 WITH BIRACE DEPENDENT. = 0.14120 WITH PISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.10674
ETA = 0.22548 WITH BIRACE DEPENDENT. = 0.11303 WITH PISTAY9 DEPENDENT.
PEARSON'S R = 0.11304 SIGNIFICANCE = 0.0065

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

CROSSTABULATION OF

BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY P2STAY9 PRE 1--LESS COMPRE.STAY9

PAGE 1 OF 1

BIRACE	P2STAY9	BUTTOM 4 PERCENT	5-11 CEN TILE	12-23 CE NTILE	24-40 CE NTILE	41-60 CE NTILE	61-77 CE NTILE	78-89 CE NTILE	90-96 CE NTILE	97-100 C ENTILE	ROW TOTAL
	COUNT	1	2	3	4	5	6	7	8	9	
5		1	15	27	45	79	67	38	7	4	283
MINORITY-ALL B,H	ROW PCT	0.4	5.3	9.5	15.9	27.9	23.7	13.4	2.5	1.4	58.6
	COL PCT	100.0	57.7	58.7	69.2	62.2	58.3	52.8	31.8	44.4	
	TOT PCT	0.2	3.1	5.6	9.3	16.4	13.9	7.9	1.4	0.8	
6		0	11	19	20	48	48	34	15	5	200
WHITE---NONHISPA	ROW PCT	0.0	5.5	9.5	10.0	24.0	24.0	17.0	7.5	2.5	41.4
	COL PCT	0.0	42.3	41.3	30.8	37.8	41.7	47.2	68.2	55.6	
	TOT PCT	0.0	2.3	3.9	4.1	9.9	9.9	7.0	3.1	1.0	
COLUMN TOTAL		1	26	46	65	127	115	72	22	9	483
		0.2	5.4	9.5	13.5	26.3	23.8	14.9	4.6	1.9	100.0

3 OUT OF 18 (16.7%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.414
RAW CHI SQUARE = 12.68210 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1233
CRAMER'S V = 0.16204
CONTINGENCY COEFFICIENT = 0.15995
LAMBDA (ASYMMETRIC) = 0.04500 WITH BIRACE DEPENDENT. = 0.0 WITH P2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.01619
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01991 WITH BIRACE DEPENDENT. = 0.00728 WITH P2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01066
KENDALL'S TAU B = 0.09646. SIGNIFICANCE = 0.0083
KENDALL'S TAU C = 0.12165. SIGNIFICANCE = 0.0083
GAMMA = 0.15226
SOMERS'S D (ASYMMETRIC) = 0.07423 WITH BIRACE DEPENDENT. = 0.12535 WITH P2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.09324
ETA = 0.16210 WITH BIRACE DEPENDENT. = 0.10472 WITH P2STAY9 DEPENDENT.
PEARSON'S R = 0.10472 SIGNIFICANCE = 0.0107

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

* C R O S S T A B U L A T I O N O F * * * * * * * * * * * * * * * * * * *
BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY TISTAY9 POST 1--LIBS VOCAB. STAY9
* * * * * * * * * * * * * * * * * * * \

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY T2STAY9 POST T--CTBS COMPRE.STAY9

BIRACE	COUNT / ROW PCT / COL PCT / TOT PCT	T2STAY9 1 BOTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
MINORITY-ALL B,H	5	1	2	15	21	81	68	45	19	17	269
		0.4	0.7	5.6	7.8	30.1	25.3	16.7	7.1	6.3	58.9
		100.0	28.6	53.6	56.8	69.8	59.1	55.6	44.2	58.6	
		0.2	0.4	3.3	4.6	17.7	14.9	9.8	4.2	3.7	
WHITE---NONHISPA	6	0	5	13	16	35	47	36	24	12	188
		0.0	2.7	6.9	8.5	18.6	25.0	19.1	12.8	6.4	41.1
		0.0	71.4	46.4	43.2	30.2	40.9	44.4	55.8	41.4	
		0.0	1.1	2.8	3.5	7.7	10.3	7.9	5.3	2.6	
COLUMN TOTAL		1	7	28	37	116	115	81	43	29	457
		0.2	1.5	6.1	8.1	25.4	25.2	17.7	9.4	6.3	100.0

4 OUT OF 18 (22.2%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.411
RAW CHI SQUARE = 13.69750 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.0900
CRAMER'S V = 0.17313
CONTINGENCY COEFFICIENT = 0.17059
LAMBDA (ASYMMETRIC) = 0.04255 WITH BIRACE DEPENDENT. = 0.03519 WITH T2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.03781
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.02288 WITH BIRACE DEPENDENT. = 0.00837 WITH T2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01226
KENDALL'S TAU B = 0.05665. SIGNIFICANCE = 0.0858
KENDALL'S TAU C = 0.07129. SIGNIFICANCE = 0.0858
GAMMA = 0.08921
SOMERS'S D (ASYMMETRIC) = 0.04361 WITH BIRACE DEPENDENT. = 0.07360 WITH T2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.05476
ETA = 0.17319 WITH BIRACE DEPENDENT. = 0.04410 WITH T2STAY9 DEPENDENT.
PEARSON'S R = 0.04410 SIGNIFICANCE = 0.1735

NUMBER OF MISSING OBSERVATIONS = 26

APPENDIX J (CONT'D)

STUDENT GROUP: 'MIDDLE' FAMILY INCOME (REDUCED PRICE LUNCH)

CROSSTABULATION OF
BIRACE MINORITY=5 WHITE=6 MISSING DATA--999 BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
PAGE 1 OF 1

BIRACE	SEX: MALE (1)	SEX: FEMALE (2)	ROW TOTAL
MINORITY-ALL B,H	127	156	283
	44.9	55.1	58.6
	53.4	63.7	
	26.3	32.3	
WHITE---NONHISPA	111	89	200
	55.5	44.5	41.4
	46.6	36.3	
	23.0	18.4	
COLUMN TOTAL	238	245	483
	49.3	50.7	100.0

CORRECTED CHI SQUARE = 4.87489 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0273
RAW CHI SQUARE = 5.29139 WITH 1 DEGREE OF FREEDOM. SIGNIFICANCE = 0.0214
PHI = 0.10467
CONTINGENCY COEFFICIENT = 0.10410
LAMBDA (ASYMMETRIC) = 0.0 WITH BIRACE DEPENDENT. = 0.09244 WITH SEX DEPENDENT.
LAMBDA (SYMMETRIC) = 0.05023
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.00809 WITH BIRACE DEPENDENT. = 0.00792 WITH SEX DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00800
KENDALL'S TAU B = -0.10467. SIGNIFICANCE = 0.0108
KENDALL'S TAU C = -0.10310. SIGNIFICANCE = 0.0108
GAMMA = -0.21011
SOMERS'S D (ASYMMETRIC) = -0.10312 WITH BIRACE DEPENDENT. = -0.10624 WITH SEX DEPENDENT.
SOMERS'S D (SYMMETRIC) = -0.10466
ETA = 0.10456 WITH BIRACE DEPENDENT. = 0.10467 WITH SEX DEPENDENT.
PEARSON'S R = -0.10467 SIGNIFICANCE = 0.0107

APPENDIX J (CONT'D)

STUDENT GROUP: 'HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

CROSSTABULATION OF CGRADE GRADE--CURRENT YEAR BY BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 PAGE 1 OF 1

		BIRACE		
	COUNT / ROW PCT / COL PCT / TOT PCT	MINORITY -ALL B,H	WHITE--- NONH	SPA	ROW TOTAL
		5	6	
CGRADE				
	1	232	266	498
RETAINED	THRU 80	46.6	53.4	100.0
		100.0	100.0	
		46.6	53.4	
	COLUMN TOTAL	232	266	498
		46.6	53.4	100.0

TATISTICS CANNOT BE COMPUTED WHEN THE NUMBER OF NON-EMPTY ROWS OR COLUMNS IS ONE.

APPENDIX J (CONT'D)

STUDENT GROUP: 'HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

* CROSSTABULATION OF *
BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY SEX SEX OF STUDENT--AS CURRENTLY LISTED--M F
* * * * * * * * * * * * * * * * * * * \

APPENDIX J (CONT'D)

STUDENT GROUP: 'HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY PISTAY9 PRE 1--CTBS VOCAB. STAY9

	PISTAY9									
BIRACE	COUNT / ROW PCT / COL PCT / TOT PCT	1 BUTTOM 4 PERCENT	2 5-11 CEN TILE 7 P	3 12-23 CE NTILE 12	4 24-40 CE NTILE 17	5 41-60 CE NTILE 20	6 61-77 CE NTILE 17	7 78-89 CE NTILE 12	8 90-96 CE NTILE 7	9 97-100 C ENTILE 4	ROW TOTAL
MINORITY-ALL B,H	5	1	4	13	15	44	55	57	28	15	232
		0.4	1.7	5.6	6.5	19.0	23.7	24.6	12.1	6.5	46.6
		100.0	33.3	72.2	50.0	54.3	49.1	41.9	38.9	41.7	
		0.2	0.8	2.6	3.0	8.8	11.0	11.4	5.6	3.0	
WHITE---NONHISPA	6	0	8	5	15	37	57	79	44	21	266
		0.0	3.0	1.9	5.6	13.9	21.4	29.7	16.5	7.9	53.4
		0.0	66.7	27.8	50.0	45.7	50.9	58.1	61.1	58.3	
		0.0	1.6	1.0	3.0	7.4	11.4	15.9	8.8	4.2	
COLUMN TOTAL		1	12	18	30	81	112	136	72	36	498
		0.2	2.4	3.6	6.0	16.3	22.5	27.3	14.5	7.2	100.0

2 OUT OF 18 (11.1%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.466
RAW CHI SQUARE = 12.38033 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.1350
CRAMER'S V = 0.15767
CONTINGENCY COEFFICIENT = 0.15575
LAMBDA (ASYMMETRIC) = 0.06897 WITH BIRACE DEPENDENT. = 0.0 WITH PISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02694
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01877 WITH BIRACE DEPENDENT. = 0.00702 WITH PISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.01022
KENDALL'S TAU B = 0.09931. SIGNIFICANCE = 0.0062
KENDALL'S TAU C = 0.12663. SIGNIFICANCE = 0.0062
GAMMA = 0.15523
SOMERS'S D (ASYMMETRIC) = 0.07752 WITH BIRACE DEPENDENT. = 0.12722 WITH PISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.09634
ETA = 0.15765 WITH BIRACE DEPENDENT. = 0.10315 WITH PISTAY9 DEPENDENT.
PEARSON'S R = 0.10316 SIGNIFICANCE = 0.0107

APPENDIX J (CONT'D)

STUDENT GROUP: 'HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY P2STAY9 PRE 1--CIBS COMPRE.STAY9 PAGE 1 OF 1

BIRACE	P2STAY9 BOTTOM 4 PERCENT	5-11 CEN TILE 7 P	12-23 CE NTILE 12	24-40 CE NTILE 17	41-60 CE NTILE 20	61-77 CE NTILE 17	78-89 CE NTILE 12	90-96 CE NTILE 7	97-100 C ENTILE 4	ROW TOTAL
MINORITY-ALL B,H	2	7	15	38	51	68	26	18	7	232
	0.9	3.0	6.5	16.4	22.0	29.3	11.2	7.8	3.0	46.6
	100.0	36.8	40.5	56.7	49.5	44.2	38.8	52.9	46.7	
	0.4	1.4	3.0	7.6	10.2	13.7	5.2	3.6	1.4	
WHITE---NONHISPA	0	12	22	29	52	86	41	16	8	266
	0.0	4.5	8.3	10.9	19.5	32.3	15.4	6.0	3.0	53.4
	0.0	63.2	59.5	43.3	50.5	55.8	61.2	47.1	53.3	
	0.0	2.4	4.4	5.8	10.4	17.3	8.2	3.2	1.6	
COLUMN TOTAL	2	19	37	67	103	154	67	34	15	498
	0.4	3.8	7.4	13.5	20.7	30.9	13.5	6.8	3.0	100.0

2 OUT OF 18 (11.1%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.932
RAW CHI SQUARE = 9.22690 WITH 8 DEGREES OF FREEDOM. SIGNIFICANCE = 0.3235
CRAMER'S V = 0.13612
CONTINGENCY COEFFICIENT = 0.13487
LAMBDA (ASYMMETRIC) = 0.05603 WITH BIRACE DEPENDENT. = 0.0 WITH P2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02257
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01456 WITH BIRACE DEPENDENT. = 0.00542 WITH P2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00790
KENDALL'S TAU B = 0.03170. SIGNIFICANCE = 0.2124
KENDALL'S TAU C = 0.04032. SIGNIFICANCE = 0.2124
GAMMA = 0.04972
SOMERS'S D (ASYMMETRIC) = 0.02480 WITH BIRACE DEPENDENT. = 0.04051 WITH P2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.03077
ETA = 0.13610 WITH BIRACE DEPENDENT. = 0.02187 WITH P2STAY9 DEPENDENT.
PEARSON'S R = 0.02189 SIGNIFICANCE = 0.3130

APPENDIX J (CONT'D)

STUDENT GROUP: 'HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=999 BY TISTAY9 POST 1--CHS VOCAB. STAY9

BIRACE	TISTAY9 COUNT / ROW PCT / COL PCT / TOT PCT	1 BOTTOM 4 PERCENT TILE 7 P	2 5-11 CEN TILE 12 NTILE	3 12-23 CE 12 NTILE	4 24-40 CE 17 NTILE	5 41-60 CE 20 NTILE	6 61-77 CE 17 NTILE	7 78-89 CE 12 NTILE	8 90-96 CE 7 ENTILE	9 97-100 C 4 ENTILE	ROW TOTAL
5		0	4	11	29	44	65	38	23	13	227
MINORITY-ALL B,H		0.0	1.8	4.8	12.8	19.4	28.6	16.7	10.1	5.7	46.9
		0.0	57.1	50.0	56.9	45.8	49.2	40.4	39.0	59.1	
		0.0	0.8	2.3	6.0	9.1	13.4	7.9	4.8	2.7	
6		1	3	11	22	52	67	56	36	9	257
WHITE---NONHISPA		0.4	1.2	4.3	8.6	20.2	26.1	21.8	14.0	3.5	53.1
		100.0	42.9	50.0	43.1	54.2	50.8	59.6	61.0	40.9	
		0.2	0.6	2.3	4.5	10.7	13.8	11.6	7.4	1.9	
COLUMN TOTAL		1 0.2	7 1.4	22 4.5	51 10.5	96 19.8	132 27.3	94 19.4	59 12.2	22 4.5	484 100.0

4 OUT OF 18 (22.2%) OF THE VALID CELLS HAVE EXPECTED CELL FREQUENCY LESS THAN 5.0.
MINIMUM EXPECTED CELL FREQUENCY = 0.469
RAW CHI SQUARE = 8.01036 WITH 8 DEGREES OF FREEDOM, SIGNIFICANCE = 0.4325
CRAMER'S V = 0.12865
CONTINGENCY COEFFICIENT = 0.12760
LAMBDA (ASYMMETRIC) = 0.05286 WITH BIRACE DEPENDENT. = 0.0 WITH TISTAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.02073
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01259 WITH BIRACE DEPENDENT. = 0.00472 WITH TISTAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00687
KENDALL'S TAU B = 0.05355. SIGNIFICANCE = 0.0918
KENDALL'S TAU C = 0.06837. SIGNIFICANCE = 0.0518
GAMMA = 0.08367
SOMERS'S D (ASYMMETRIC) = 0.04178 WITH BIRACE DEPENDENT. = 0.06863 WITH TISTAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.05194
ETA = 0.12863 WITH BIRACE DEPENDENT. = 0.05100 WITH TISTAY9 DEPENDENT.
PEARSON'S R = 0.05100 SIGNIFICANCE = 0.1314

NUMBER OF MISSING OBSERVATIONS = 14

APPENDIX J (CONT'D)

STUDENT GROUP: ;HIGH' FAMILY INCOME (FULLY PAY FOR LUNCH)

CROSSTABULATION OF BIRACE MINORITY=5 WHITE=6 MISSING DATA=-999 BY T2STAY9 POST 1--CTBS COMPRE.STAY9 PAGE 1 OF 1

BIRACE	T2STAY9	1	2	3	4	5	6	7	8	9	ROW TOTAL
	COUNT	15-11 CEN ITILE 7 P	12-23 CE NTILE 12	24-40 CE NTILE 17	41-60 CE NTILE 20	61-77 CE NTILE 17	78-89 CE NTILE 12	90-96 CE NTILE 7	97-100 C ENTILE 4		
	ROW PCT										
	COL PCT										
	TOT PCT										
5		8	7	19	49	67	35	19	23		227
MINORITY-ALL B,H		3.5	3.1	8.4	21.6	29.5	15.4	8.4	10.1		46.9
		53.3	46.7	41.3	50.0	55.4	37.6	39.6	47.9		
		1.7	1.4	3.9	10.1	13.8	7.2	3.9	4.8		
6		7	8	27	49	54	58	29	25		257
WHITE---NONHISPA		2.7	3.1	10.5	19.1	21.0	22.6	11.3	9.7		53.1
		46.7	53.3	58.7	50.0	44.6	62.4	60.4	52.1		
		1.4	1.7	5.6	10.1	11.2	12.0	6.0	5.2		
COLUMN TOTAL		15	15	46	98	121	93	48	48		484
		3.1	3.1	9.5	20.2	25.0	19.2	9.9	9.9		100.0

RAW CHI SQUARE = 8.95106 WITH 7 DEGREES OF FREEDOM. SIGNIFICANCE = 0.2562
CRAMER'S V = 0.13599
CONTINGENCY COEFFICIENT = 0.13475
LAMBDA (ASYMMETRIC) = 0.06167 WITH BIRACE DEPENDENT. = 0.01102 WITH T2STAY9 DEPENDENT.
LAMBDA (SYMMETRIC) = 0.03051
UNCERTAINTY COEFFICIENT (ASYMMETRIC) = 0.01345 WITH BIRACE DEPENDENT. = 0.00494 WITH T2STAY9 DEPENDENT.
UNCERTAINTY COEFFICIENT (SYMMETRIC) = 0.00722
KENDALL'S TAU B = 0.04019. SIGNIFICANCE = 0.1581
KENDALL'S TAU C = 0.05165. SIGNIFICANCE = 0.1581
GAMMA = 0.06232
SOMERS'S D (ASYMMETRIC) = 0.03116 WITH BIRACE DEPENDENT. = 0.05185 WITH T2STAY9 DEPENDENT.
SOMERS'S D (SYMMETRIC) = 0.03892
ETA = 0.13597 WITH BIRACE DEPENDENT. = 0.03890 WITH T2STAY9 DEPENDENT.
PEARSON'S R = 0.03893 SIGNIFICANCE = 0.1964

NUMBER OF MISSING OBSERVATIONS = 14

.117

117A